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ABSTRACT

The major purpose of the institute was to provide industrial arts teachers with the necessary expertise to effectively interpret modern industry to their students. The program was comprised of three interrelated phases--technical information, practical application, and teaching methods and techniques. To foster an understanding of the technical ramifications of industry, topics of discussion covered industrial management, marketing, industrial engineering, designing, and the social impact of industry on the American economy. Laboratory experience provided the participants with an opportunity to make practical application of knowledge gained in phase one. Through group interaction, a mock company was developed, which designed, developed, mass-produced, and marketed a product. In the teaching methods and techniques phase, activities included field trips, seminars, demonstrations, production of visuals and the use of audio-visual equipment. The instructional staff of specialists representing seven different areas, provided the range of knowledge necessary to present a complete overview of industry. (Author/BC)

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# FINAL TECHNICAL REPORT
# ON THE EPDA INSTITUTE
# FOR ADVANCED STUDY IN INDUSTRIAL ARTS
# AMERICAN TECHNOLOGY

June 9 Through July 18, 1969

Submitted by

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## ABSTRACT

The major purpose of the EPDA Institute for Advanced Study in Industrial Arts was to provide industrial arts teachers with the necessary expertise to effectively interpret modern industry to their students. The institute program designed to accomplish this was comprised of three interrelated phases. These phases consisted of (1) technical information, (2) practical application, and (3) teaching methods and techniques.

Technical Information. Phase one of the program was designed to foster an understanding of the technical ramifications of industry. Topics of discussion were industrial management, marketing, industrial engineering, designing, and the social impact of industry on the American economy.

Practical Application. Phase two of the institute was composed of laboratory experience. This portion of the program provided the participants with an opportunity to make practical application of knowledge gained in phase one. Through group interaction, a mock company was developed. This company designed, developed, mass-produced, and marketed a product.

Teaching Methods and Techniques. The third phase was concerned with teaching methods and techniques. Activities within this phase were field trips, seminars, demonstrations, production of visuals and the use of audio-visual equipment.

## Instructional Staff

The instructional staff of the institute was comprised of specialists in the areas of industrial education, marketing, industrial engineering, elementary and secondary education, sociology and instructional media. This interdisciplinary staff provided the range of knowledge necessary to present a complete overview of industry.

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# CHAPTER I

## INTRODUCTION

The major purpose of the EPDA - Part D Institute for Advanced Study in Industrial Arts was to strengthen the participants' knowledge concerning the various ramifications of industry. Of equal importance was the development of methodology suitable for conveying this information to students.

The specific objectives of this institute were as follows:

1. To develop a workable and meaningful knowledge of corporate finance, organization, mass production, tooling standardization, and automation.
2. To acquaint the participant with the socio-economic impact of industry on society.
3. To develop an awareness of techniques and procedures common to modern industry.
4. To provide classroom and laboratory experiences necessary to gain an insight into industry.
5. To familiarize participants with better teaching methods and techniques, including audio-visual media and instructional materials.

## Educational Need

The main objective of industrial arts is the interpretation of industry. Most industrial arts teachers lack the expertise to effectively interpret modern industry to their students. This institute provided industrial arts teachers with a background which will enable them to more effectively interpret industrial procedures to their students.

## Explanatory Information

It should be noted that Chapter VII and the Appendices referred to in that chapter were not specifically requested by the EPDA Handbook for Directors. This information was developed for submission to the institute participants. It will serve as a guideline when they initiate this unit of study in their regular teaching programs.

Reference books which were purchased for the EPDA Institute are listed in Appendix A. Additional references, purchased for last summer's NDEA Institute, were also made available.

Specific questions listed in the Director's Report are restated and underlined throughout Chapters II-VI. This was done to enhance the interpretation of this report by the reader.

# CHAPTER II

## PLANNING

Indicate to what extent, if any, the proposed planning phase of the program was significantly modified.

Several changes were made in the EPDA Institute proposal which was submitted to the USOE. These changes are as follows:

a. Changes in Staff

Several changes in staff members were necessary as pointed out below:

1. Mr. James Drown who was unable to serve as laboratory instructor for the institute was replaced by Mr. George Carter. Carter is a public school teacher who attended the institute held at Mississippi State University last summer.
2. Dr. D. C. Mosely, Head, Management Department, could not serve as an institute instructor this summer because of an overseas assignment. Mosely was replaced by Dr. Z. W. Koby, Professor of Marketing at Mississippi State University
3. Dr. Frank Cotton, Head of the Industrial Engineering Department, was scheduled for two weeks of instruction. He was recently elected Executive Vice President of the American Institute of

Industrial Engineers. For this reason, he needed to be off campus during the second week of his scheduled presentation. Dr. Wayne Parker, Assistant Professor, Industrial Engineering, Mississippi State University, substituted for Cotton during the second week.

4. In the light of last summer's NDEA Institute evaluation, it was decided that a different approach to industrial drafting and design should be taken. Consequently, Dr. R. E. Magowan, Chairman, Manufacturing Technology Department, Memphis State University, was selected to take the place of Dr. L. D. Yeager on the program. (See Appendix B for complete institute staff.)

b. Changes in Program Operation

A similar type institute (NDEA) was conducted on campus last year. Several weaknesses in program operation were made evident through evaluations performed by participants and staff. Consequently, such modifications as time allocation for different phases of the program, increased laboratory time, and more plant visits were incorporated in this year's institute.

c. Changes Due to Reader's Suggestions

An evaluating committee read the proposal and made several suggestions for improvement.

1. A statement was made that job lot production as well as mass production should be covered. The program was redesigned to allow equal time for job lot as well as line production.
2. A comment was made that there should be a greater involvement with industry if certain institute objectives were to be met. Four industrial representatives presented information pertaining to the operation and organization of their companies. After each presentation a visit to the plant was made. These visits were conducted under the supervision of company officials. In addition to this direct involvement with industry, at least six of the instructional staff had worked and/or consulted for industrial firms. Each of the instructors related to their industrial experiences during their presentations.

d. Consultation by Director

On two occasions directors of industrial arts institutes assembled to discuss ways and means by which the institutes could be improved. These discussions included ideas about program evaluation, participant exchange, consultant availability, and program modification based on past experiences.

The director met with each staff member, guest lecturer, and consultant on numerous occasions to discuss the program. Through these consultations the director was able to make each person aware of the total program and of the interrelationships necessary to assure continuity.

e. Results of Consultations

Preinstitute planning was initiated through consultation with other directors, participants in the prior institute, guest lecturers, and institute consultants. The planning phase was concluded with desirable results.

Comment critically on the availability and distribution of resources for planning, such as time, staff, facilities and funds indicating how you would plan differently another time.

f. Availability and Distribution of Resources

The EPDA grant made provision for the director to be released one-half time from his teaching responsibilities during the semester prior to the institute. This time was sufficient to allow the director to adequately plan and prepare for the institute.

On various occasions the institute staff, instructors, and consultants were involved with the planning phase. The cooperative effort of these persons facilitated the development of a well planned program.

Considering the aforementioned discussion pertaining to institute planning no additional major changes are deemed necessary to assure a successful future institute of a similar nature.

# CHAPTER III

## PARTICIPANTS AND STAFF

### Participants

Indicate whether or not the applicant response met with your expectations on terms of extent of interest and qualifications.

Table I is a statistical account of participant response. Table I shows there were 191 requests from individuals concerning the institute. Of this number, 86 applicants completed and returned all application information requested. An additional 19 applicants returned a portion of the information requested. The breakdown shown in Table I indicates that an appreciable number of industrial arts teachers were interested in the institute.

How well did your selection criteria and methods work?

Each applicant was asked to return a transcript, a confidential evaluation form, a personal data form, and a paragraph explaining what he intended to do with the information received during the institute. The composite information received from the applicant served as evaluative data for final participant selection. Based on established criteria, the full time institute staff individually selected the

## TABLE I

## STATISTICS OF PARTICIPANT RESPONSE

| | Alabama | Arkansas | Louisiana | Mississippi | Tennessee | Total |
|---|---|---|---|---|---|---|
| Number of announcement brochures sent to all Industrial Arts teachers in each state | 221 | 200 | 507 | 208 | 387 | 1,523 |
| Number of requests received from individuals in each state and mailed application forms | 26 | 12 | 66 | 59 | 28 | 191 |
| Number of applications completed and returned with Confidential Evaluation, Transcript, and Paragraph | 15 | 8 | 30 | 24 | 9 | 86 |
| Number of incomplete applications | 2 | 1 | 4 | 10 | 2 | 19 |
| Number of participants | 3 | 2 | 9 | 8 | 2 | 24 |
| Number of alternates | 4 | 3 | 13 | 7 | 2 | 29 |
| Number of individuals not accepted | 9 | 3 | 10 | 6 | 5 | 33 |

Average Age of Participants: 32.7 years

Number of Requests for Applications from Individuals Outside the Geographic Area: 97.

participants. A comparison of the individual staff member's selections revealed a high degree of agreement. The staff as a whole made the final selection of participants. In the final analysis, the high calibre of the participants reflected the desirability of selection method utilized.

If your program was specifically designed to achieve a certain mix of participants, briefly state what that mix was and what success or failure your program experienced in that regard.

Final selection was based on qualifications of the applicants. Special consideration was given to applicants who were known to teach in schools with high concentrations of families from a low socio-economic level. To further achieve a desirable mix, four applicants with supervisory functions were included in the final selection. Inclusion of supervisors (local and state) provided a multiplier effect; their positions provide a vehicle for wide-spread dispersement of the industrial concepts presented during the institute.

Comment critically on the number of participants, schools, and geographic or demographic areas represented.

Twenty-four participants attended the institute. These participants represented Alabama, Arkansas, Louisiana, Mississippi and Tennessee. The number of participants from each state was determined by the ratio of applicants from the respective states.

The size of the class was excellent for group activities, laboratory experiences, and field trips. A lesser number would probably have handicapped laboratory exercises while a much larger number would have hampered individual assistance, discussions, and other activities of the institute.

With one exception, only one participant from any given school attended the institute. The staff believed that this arrangement had desirable as well as undesirable features. With only one person attending from a school, more school systems could be involved; thus, the experiences gained could be utilized over a wider area. On the other hand, if two participants from a given school could attend, an excellent arrangement for team teaching could be developed because the mass production approach is conducive to team teaching. (See Appendix C for institute participants.)

## Staff

Indicate the relative influence of different types of staff--regular and visiting faculty, visiting lecturers, consultants, persons of varying backgrounds, etc.,—on the effectiveness of the program.

The director, assistant director, and laboratory instructor of the institute were employed as full time staff members.

The director and assistant director are regularly employed by Mississippi State University in the Department of Industrial and Occupational Education. The director was responsible for coordinating the instructional program as well as all other aspects of the institute. The assistant director provided guidance for the institute and worked with the laboratory instructor in a team teaching approach during the laboratory activities. Both the director and the assistant director continuously converted the lecture phases of the institute into learning experiences by showing practical applications to the teaching of modern industry.

The laboratory instructor is an industrial arts teacher (grades 8 - 12) employed by Bruce High School, Bruce, Mississippi. Having attended a similar institute at Mississippi State University last summer, he had an insight into the present institute and its operation. The laboratory instructor incorporated the interpretation of modern industry into his high school program through a mass production unit. Therefore, he was able to relate to his past experiences. Being on the peer level with the participants, the communication channel was kept open between the participants and the laboratory instructor.

Four part-time instructors were employed by the institute to provide technical information. Each of these instructors has worked and/or consulted for industrial firms, and each is a specialist in his subject matter area. The part-time instructors continuously referred to their past experiences to make their discussions more meaningful.

Six consultants and lecturers were on the program to present information pertinent to industrial arts. The lectures by these people pertained to the teaching and supervision of industrial arts in today's school systems.

As indicated in the above paragraphs, the backgrounds of staff members were diversified. The diversity of these backgrounds allowed the institute to cover the entire spectrum from technical information to practical application.

Staff members and lecturers were chosen by their merits of professionalism and their knowledge of the subject matter. Each instructor had a minimum of five years' teaching experience. Many teaching techniques were employed by each presenter. Situations requiring group involvement seemed to be the most effective.

### Describe and appraise activities directed towards orienting the staff to specific objectives of the program, maintaining their continued involvement throughout the program, and encouraging carry-over into their regular work.

During preinstitute planning the director consulted with each member of the staff. Each staff member was made aware of his responsibilities, in relation to the total program. This overview assured program continuity Each part time instructor and lecturer was invited to attend at least one institute session prior to his presentation, thus enabling him to better correlate his discussion with prior presentations.

Assuming the ratio of staff to participants in your program is a significant factor, comment critically on its effectiveness.

A total of thirteen staff members and lecturers were employed by the institute. Having many different people on the program added to the success of the institute. Some specific advantages were:

1. The utilization of specialists provided authoritative information.
2. Three full time staff members provided ample opportunity for individual instruction and consultation.
3. Staff members with varied backgrounds provided coverage of information.

# CHAPTER IV

## ORIENTATION PROGRAM

Indicate what special activities were conducted to orient the participants.

Orientation of participants began several months before the institute started. The director mailed the following to each participant: (1) daily outline for the institute, (2) names and addresses of the 24 participants, (3) names and addressed of the instructional staff, (4) institute procedures, (5) campus map, (6) Starkville map, (7) news release, (8) information pertaining to graduate school and course credit, and (9) suggested reading list. (See Appendices D, E, and F.)

The participants were greeted on the first day of the institute by the staff who asked each person to introduce himself. Information was provided regarding the origin of institutes such as NDEA and EPDA, the cost of operating the institute, and a description of institute activities. The participants were briefed on campus facilities such as: (1) housing, (2) mail service, (3) food service, (4) laundry services, and (5) banking services. Ample time was allowed on the first day for participants to check into their rooms.

The afternoon of the first day included a welcome by Dr. Merrill W. Hawkins, Associate Dean of the College of Education, and Mr. E. F. Mitchell, Head of the Department of

Industrial and Occupational Education. The participants were also introduced to the laboratory activities of the institute. At the end of the first day a social hour was provided to allow participants and staff to become acquainted.

The second day of the institute was devoted to registration. The staff assisted the participants during this period.

# CHAPTER V

## PROGRAM OPERATION

Indicate to what extent the specified program objectives were met, insofar as can be measured at the time of the final report.

On the last day of the institute the participants were given the following evaluation form. The numbers in the blanks indicate the average rating by the 24 participants.

### EVALUATION FORM A

### EVALUATION OF EXTENT TO WHICH SPECIFIC INSTITUTE OBJECTIVES WERE MET

Please rate the following according to the extent to which you feel they were satisfied during the institute. Use the following rating scale: (1) Completely satisfied, (2) Well satisfied, and (3) Poorly satisfied.

1.2 1. To develop a workable and meaningful knowledge of corporate finance, organization, mass production, tooling, standardization, and automation.
1.8 2. To acquaint the participant with the socio-economic impact of industry on society.
1.2 3. To develop an awareness of techniques and procedures common to modern industry.
1.4 4. To provide classroom and laboratory experiences necessary to gain an insight into industry.
1.8 5. To familiarize participants with better teaching methods and techniques, including audio-visual media and instructional materials.

On the back side of this sheet, justify your rating of each objective.

The participants justification of their rating, as called for on the evaluation form, indicated a high degree of satisfaction concerning the objectives of the institute.

## Did the several components of the program relate effectively?

There was a high degree of continuity among the several phases of the institute. The presentations on technical information made by the part time instructors were well correlated, due to the efforts of the director in orienting the staff. The technical information was, in turn, related to the classroom situation by the full time staff. The participants applied what they learned in class through development of a simulated industry in which they produced a marketable product. In addition to producing the product, the participants also created a sales department which marketed the product. These laboratory activities allowed the participants to actually put into use the technical information presented in class.

Information gained from the industrial films was correlated with the practical application phase of the institute through participant-staff discussions. (See Appendix G for films shown.)

Field trips were utilized to give the participants an insight into industrial procedures. Discussions following the industrial visits correlated the technical information gained from the visits with the laboratory phases of the institute.

If more than one institution or agency was involved, explain any significant effects they had or may later have on one another.

Industrial Education departments from Mississippi State University, Texas A&M University, and Memphis State University were involved in the institute. By being brought together, the representatives of the visiting institutions obtained a better insight into what was being achieved in the institute.

The part time instructional staff from the various departments at Mississippi State University developed a higher degree of respect for industrial education. Likewise, the staff members of the Department of Industrial and Occupational Education at the host institution gained a better understanding of the departments represented.

Describe new techniques, materials or equipment used and their effectiveness.

Some techniques utilized during the institute were role playing and case study. These techniques were used successfully by the Industrial Engineering Department, the Marketing Department, and the Sociology Department. Although these techniques are common to the aforementioned departments, they are not as widely used in industrial education.

Closed circuit television was utilized in the institute. This equipment can offer many interesting and effective uses in industrial arts.

If the informal program had an important influence on the program's effectiveness, explain.

The informal program added measurably to the success of the institute through the enhancement of participant relationships. Such activities as after-hour discussions, outside group activities, and committee assignments were possible because participants were housed together. On four occasions the participants gathered for evening socials, thereby enabling them to become better acquainted.

Comment critically on beginning and ending dates, duration of the program; distribution of staff and participant time for formal instruction or unstructured activities, etc.

### Length of the Institute

Six weeks seemed to be a desirable length of time for the institute. By having the institute scheduled for six weeks, which is the required length of a summer school session at Mississippi State University, each participant was able to earn six semester hours of graduate credit.

The six weeks' period afforded sufficient time to carry on the activities necessary to teach the procedures of modern industry. A high degree of interest and enthusiasm was evident throughout the institute.

## Beginning Date of the Institute

Mississippi State University personnel realize that many teachers are in need of furthering their education. The university cooperates by beginning the summer program at a time when teachers who so desire can attend. The summer session begins one or two weeks after the close of a majority of the elementary and secondary schools in the five-state area served by the institute.

The institute started at the same time that the regular summer session began. All participants had fulfilled their school years' teaching responsibilities and were present the first day of the institute. At the conclusion of the institute, participants had an opportunity to attend the second session of summer school if they so desired.

## Distribution of Classroom Time vs. Free Time

Because of the nature of the institute, six hours per weekday were necessary to carry on the institute activities. Homework and traditional class assignments were kept to a minimum.

Periodic allotments were made for coffee and smoke breaks. Approximately five hours of daylight time was available after the close of each day's formal activities. The activities of the institute were so diverse that participants morale was high throughout the six week period.

# CHAPTER VI

## EVALUATION AND CONCLUSIONS

### Evaluation

Report the results of any objective evaluation that was made of your program.

On the last day of the institute, the participants were asked to complete the following form (Evaluation Form B). The numbers in the blanks reflect the average response of the 24 participants.

### EVALUATION FORM B

### EVALUATION OF THE INSTITUTE

Your sincere response to the following evaluation will be most helpful in the planning of future institutes and in determining the success of this institute.

Please rate each of the following items by using the numbers (1) excellent; (2) above average; (3) average; (4) below average; and (5) poor.

1.3 a. Housing provided for participants

1.1 b. Pre-institute information provided

2.7 c. Classroom and laboratory facilities provided

1.1 d. Variety of activities provided in the institute

1.1 e. Staff assistance throughout the duration of the institute

1.6 f. Use of audio-visual aids

1.5 g. Provision for "free time"

1.1 h. Related resources for study provided

1.1 i. Atmosphere established for free expression

1.7 j. Correlation of lectures to laboratory activities

1.2 k. Ability of staff to handle problems which arose during the institute

1.4 l. Sequence in which materials were presented

1.4 m. Participation by class members

1.2 n. Your evaluation of group involvement

1.5 o. Your evaluation of the "Marketing"phase of the institute (Koby)

1.4 p. Your evaluation of the "Industrial Design" phase of the institute (Magowan)

1.5 q. Your evaluation of the "Industrial Engineering" phase of the institute (Cotton)

4.6 r. Your evaluation of the "Audio-Visual Aids" phase of the institute (Thomson)

2.8 s. Your evaluation of the "Industrial Engineering" phase of the institute (Parker)

1.9 t. Your evaluation of the "Image of Industrial Arts" phase of the institute (Mitchell)

1.8 u. Your evaluation of the "Closed Circuit T.V." phase of the institute (Shelton)

2.7 v. Your evaluation of the "Sociological" phase of the institute (Jones)

1.3 w. Your evaluation of the laboratory activities of the institute

1.3 x. Your overall evaluation of the institute

What do you believe were the two best features of the institute? ______________________________

______________________________________________

______________________________________________

What do you believe were the two poorest features of the institute? ______________________________

______________________________________________

______________________________________________

What changes would you suggest for a future institute?

______________________________________________

______________________________________________

______________________________________________

What was your most significant learning experiences during the institute? ______________________________

______________________________________________

______________________________________________

What were some unique features of the institute? __________

______________________________________________

______________________________________________

When you return to you return to your school, what will you do differently as a result of the institute? ______________

______________________________________________

______________________________________________

General Comments: ______________________________

______________________________________________

______________________________________________

______________________________________________

## Were relative merits of the program components and techniques evaluated, and what were the findings?

Below are the responses given by two participants concerning the subjective questions on Evaluation Form B. These evaluation forms were selected at random.

What do you believe were the two best features of the institute?

1. "The speakers or consultants that were used by the institute, (with exceptions). To be specific, Dr. Koby, Dr. Magowan, and Dr. Cotton."

   "The laboratory activities where the participants were very much involved with the problems of industry."

2. "Class participation as a whole in establishing a mock company and developing, producing, and marketing a product."

   "Films and field trips to industries."

What do you believe were the two poorest features of the institute?

1. "The audio-visual aids presentations."

   "The field trips to Mitchell Engineering, the exception being noted that they do have one highly automated machine operation."

2. "A couple of the speakers seemed to have difficulty in gearing the information they had to present into our situation."

   "The overall lab facilities as far as being modern, and not being able to adapt them to our program as well as they should be for mass production."

What changes would you suggest for future institutes?

1. "More marketing or time by Dr. Koby or a follow-up by Dr. Koby toward the end of the institute."

   "More on Design Analysis by Magowan."

2. "This being my first, I cannot feel qualified to suggest any changes. I also think it has accomplished its objectives to the best of my knowledge."

What was your most significant learning experience during the institute?

1. "The after hours, of discussions and cooperation among the members of the institute, which was used to plan procedures, solve problems, and evaluate while fresh on our minds."

2. "I feel I have gained a much better understanding of what industrial arts really is and better ways of setting out to accomplish the objectives set forth."

What were some unique features of the institute?

1. "Interaction by participants during scheduled meetings and outside the structured meetings."

   "Laboratory activities involving problem-solving."

   "Excellent speakers such as Koby, Magowan, and Cotton."

   "The organization and planning of the institute so that it could be functional and meaningful."

2. "I feel the entire institute was unique in many ways, all of this should be taught in public school systems and certainly in the teacher training programs."

When you return to your school, what will you do differently as a result of the institute?

1. "I will incorporate into my course of study one or more units in mass production."

> "I will re-evaluate and make necessary changes and adjustments to incorporate occupational information, guidance, and related information."
>
> "I will write a proposed program for the study of American industry."

2. "I have already made arrangements to incorporate the type of program in my curriculum this coming year. I can see where I have been 'missing the boat' as far as informing my students of our modern industrial society."

General Comments:

1. "This institute has been most meaningful and enjoyable to me as a person and as an industrial arts teacher. The fellowship enjoyed and the cooperation of the participants toward reaching a desirable end has been an enlightening experience."
2. "I have enjoyed 'everything' that has been covered in this study and I feel this will help me to become a better teacher as well as fit into our industrial society because I have a much better understanding of it myself. I can truly say, I only wish I had attended one of these before I began my first year of teaching industrial arts."

### Discuss critically the types and frequency of tests, questionnaires, evaluative conferences, etc., and their results.

During the last class session of each week the participants were asked to write a critique of the week's activities. They were asked to candidly express their opinions of the institute. As a result of the weekly written critiques and oral comments made by the participants several minor changes were made.

A record was kept of the participants' efforts and contributions in regard to the institute as a whole. These records served, in part, as a basis for the final grades given the participants.

Dr. E. R. Glazener, Head of the Department of Industrial Education at Texas A&M University served as an outside evaluator of the institute. (See Appendix H for Glazener's report.)

During the orientation program participants were informed that conferences would be held with anyone who was doing less than satisfactory work. Because of the diligent effort exhibited by the participants, few individual conferences for the above purpose were deemed necessary.

Describe arrangements for follow-up of participants and staff, and your plan for a long-term evaluation.

Each participant was asked to send the director information concerning the unit on "Interpretation of Modern Industry" that they plan to include in their industrial arts program. In addition, the director will send a questionnaire to each of the participants requesting information pertaining to their mass production project. This information will help the director evaluate the effectiveness of the institute.

## Conclusions

Consider the project as a whole and present conclusions reflecting the most significant aspects and outcomes of the program.

The full impact of the institute is intangible and, therefore, not measurable in quantitative terms. However, some of the significant outcomes are quite evident.

As stated earlier, the various departments and institutions that cooperated in this institute obtained a better understanding of each other's educational responsibilities. This interdisciplinary understanding will pave the way for future cooperation and mutual respect.

The Industrial and Occupational Education Department at Mississippi State University will initiate a graduate-undergraduate course this fall primised on the rationale which served as the basis for the institute. This course will enable future graduates of the host institute to impliment the Interpretation of Modern Industry concept into their industrial arts program.

The major impact of this institute will come about through the efforts of the participants. Accounts of program changes by last summer's participants are already on hand. Indication of implementation by this summer's participants are even more encouraging. All 24 participants indicated that their program and/or supervisory activities will change appreciably because of the experiences gained during the institute. These program changes should strengthen industrial arts. One state supervisory who was in attendance said he was going to involve other institute participants from his state in restructuring the industrial arts curriculum on the state level. A participant from another state said he intended to work with his state department in the dissemination of information obtained during the institute. The same individual reported that he has already made arrangements with a teacher training institute in his state to write a proposal for a similar type institute. The majority of the participants indicated that the institute afforded them the most significant learning experience they have received in a long time.

The major strengths of the institute rested in the people that served it. Total cooperation on the part of the staff, participants, university administration, and industrial representatives assured the success of the institute. Daily modifications based on continuous evaluation and reappraisal assured the continuity necessary to obtain the desired outcome.

The weaknesses encountered were few and minor. As indicated on the evaluation form, a few of the presentations were not up to the expectations of the participants. Although this was a minor criticism, those weaknesses will be corrected in the resubmission of next year's proposal.

This institute will have a multiplying effect on improving instruction in industrial arts education. For too long industrial arts instructors have been primarily concerned with teaching woodworking, metalworking, crafts, and the like. Now for the first time many of these teachers will have an opportunity to teach the total concept of industry. This is extremely important in the Southeast because of the emphasis on industrialization.

The new approach to teaching industrial arts as outlined in this institute will enable thousands of youngsters to obtain a more comprehensive and realistic overview of modern industry. This, in turn, will better prepare our youth for gainful employment in our industrial society.

This institute and others like it should reap benefits that astronomically surpass the initial investment of effort and expense.

# CHAPTER VII

## SUMMATION OF INSTITUTE ACTIVITIES

### Summation of Presentations

The instructional program was designed to provide participants with a technical knowledge related to industry and with methods through which this knowledge could be presented to their students. The major topics discussed during the institute were:

Industrial Marketing
Organizational Structure
Determining the cost of a business or industry
Sources of Money
Industrial Design
Industry and Mass Production
Work Method and Measurement
Quality Control
Production Control
Cost Control
Industrial Art Supervision - State Level
Industrial Art Supervision - Local Level
The Image of Industrial Arts
Closed Circuit TV
Socio-Economic Impact of Industry on Society
Summation of Laboratory Activities

These topics are summarized on the following pages.

## Industrial Marketing (Koby)

Utilizing his experience Dr. Z. William Koby (Professor of Marketing, Mississippi State University) got the technical information aspect of the institute off to an excellent start. Koby directed his discussion to several aspects of business and industry, pointing out considerations to be made by industrialists, in manufacturing and marketing a product. Changes in business trends, such as the strong impact made by discount houses were also discussed. These changes resulted from the consumers increased purchasing power. This created a greater demand for goods, thereby requiring technological development to supply the demand. The primary concern of industry is to satisfy consumer wants. Koby pointed out that such things as interest rate, fixed cost, and variable cost must be considered in setting up and operating an industry. Business must try to anticipate the needs of the public to survive. For a product to survive in today's modern business system the following principles should be adhered to: (1) the product should have a minimum amount of overhead, (2) the product should be difficult to copy, and (3) the product should stay atuned to customer wants.

## Organizational Structure (Koby)

Four types of formal organization are as follows: (1) Line organization, in which everyone in the plant works toward the end objective which is production, (2) Line-staff organization in which staff members are employed to assist in the line, (3) Functional organization in which a man has complete authority over his area or department with no one man over the entire plant, and (4) Committee type organization in which all decisions are made and all problems are solved through committees or committee meetings.

### Determinging the cost of a business or industry (Koby)

Koby elaborated on the following factors which are to be considered when setting up a company: (1) Fixed expenses which include buildings, machinery, tools, and equipment, (2) Working capitol which should be determined by (a) inventory requirements, (b) terms of payments by the customer, (c) terms of purchase by the company, and (d) contingency money.

### Sources of Money (Koby)

To set up a company one needs money or capitol. Several means of securing such capitol are as follows: (1) Equity capitol (money put up by the owner), (2) Common stock sold to secure capitol, (3) Short term financing (a loan that can be renewed each year), (4) Trade credit (extension of credit by people whom the company does business with), (5) Banks (fixed payments), (6) Factors (people who buy upon the company's accounts receivable), and (7) Intermediate source (insurance companies).

Industrial Design (Magowan)

Dr. Robert E. Magowan (Chairman, Manufacturing Technology, Memphis State University) presented the unit on design. According to Magowan creative design is a thought process resulting in original ideas and not a copying process. Good design should be functional as well as pleasing to the eye. The fundamentals of design are: (1) Unity and balance, (2) Balance and Symmetry, (3) Proportion, and (4) Rhythm. The types of design discussed are as follows: (1) Traditional or period design (design for a particular time period), (2) Contemporary design (type that is designed to be used now), and (3) Modernistic design (a break away from the past).

Magowan defined the design analysis process as: (1) statement of the problem, (2) analysis and research, (3) possible solution, (4) experimentation, and (5) final solution (Appendix I).

At this point on the program an agreement between the institute staff and Magowan was reached to change the proposed outline. Rather than presenting the outlined information, it was deemed wise for Magowan to devote the remainder of his time on the development of a product for the corporation. Under Magowan's direction the participants selected and designed a product.

## Industry and Mass Production (Cotton)

Dr. Frank Cotton (Head, Industrial Engineering Department, Mississippi State University) opened his presentation with the historical development of industry from the era of the artisan to modern line production. Utilizing the product designed during Magowan's presentation, Cotton geared his discussions to the development of an industrial organization suited for the production of the product. After a discussion of job shop versus line production, it was decided that the job shop type production would be most applicable to the production of the product.

Following a description of the process flow chart, the participants under the direction of Cotton developed such a chart for the product (see Appendix J). Other topics discussed were as follows: (1) line balancing, (2) machine balancing, (3) time standards, (4) work methods, and (5) production control. No one topic was discussed in great detail, since these topics set the stage for the following speaker. It should be noted here that Cotton involved the participants whenever possible to stimulate more interest.

## Work Method and Measurement (Parker)

Dr. Wayne Parker (Assistant Professor, Industrial Engineering, Mississippi State University) approached work methods and measurements by discussing the following: (1) operation analysis, (2) motion study, and (3) work measurement.

## Quality Control (Parker)

Quality cannot be inspected into a product, it must be designed and manufactured into it. Quality can, however, be controlled by inspection. Two of the methods used in quality control are: (1) statistical control charts, and (2) sampling plans (Dodge Romig and military standard).

## Production Control (Parker)

The production control department is one of the most important aspects of an industrial organization since it coordinates sales with production. The sales department depends upon production control for information such as: (1) scheduling production based on sales, (2) cost estimates, and (3) sales forecasts.

## Cost Control (Parker)

As a general rule it is easier to keep cost down than it is to bring it down. Cost control is essential to successful business. Several types of cost discussed were direct cost, indirect cost, fixed cost, variable cost, and total cost.

Budgets are necessary evils in industry since they are essential to operation. Some of the pitfalls of budgets and the common reason for budget failure were discussed by Parker.

## Industrial Arts Supervision - State Level

Mr. Larry Godfrey, State Supervisor of Industrial Arts for Mississippi, described the functions of his staff as including the following:

1. Staff members act as consultants to schools and teachers.
2. The staff publishes an annual industrial arts directory of all industrial arts personnel in the state.
3. The staff publishes newsletters containing items of interest to industrial arts teachers.
4. The staff conducts area workshops throughout the state for industrial arts teachers.
5. The staff endeavors to establish industrial arts programs in schools where they are non-existant.

Included in Godfrey's address to the institute was a discussion on industrial arts in the future. Godfrey stated that people now need to be thinkers, planners, and managers rather than merely tool users. Industrial arts must evolve into a program that produces the new breed of "man." This can be accomplished, in part, by industrial arts teachers becoming general educators rather than specific skill teachers.

In the remainder of his program Godfrey addressed himself to federal aid for industrial arts.

## Industrial Arts Supervision - Local Level

Mr. Charles W. Roye, Supervisor of Industrial Arts and Vocational Education, Leflore County, Mississippi, addressed himself to the duties of a local supervisor. Roye set forth the following list of duties:

1. Setting up new programs
2. Hiring of personnel
3. Pre-service and in-service training
4. Securing equipment and supplies
5. Development of the instructional program
6. Laboratory visitations.

## The Image of Industrial Arts

Mr. E. F. Mitchell, Chairman, Department of Industrial and Occupational Education, Mississippi State University, directed his presentation to the image of industrial arts teachers. According to Mitchell the industrial arts teacher cannot separate himself from the industrial arts program; the image of the teacher and the program is one and the same. Therefore, the teacher must be concerned with the way the various publics view him.

Industrial Arts must be accepted as general education and as a discipline in its own right. In order to achieve this goal industrial arts must have a curriculum in which the primary objective is to vest in our young people (boys and girls) an understanding and appreciation of modern industry, its methods, materials, processes, and its place in our culture.

## Closed Circuit TV

Dr. A. W. Shelton, Professor of Elementary and Secondary Education at Mississippi State University presented information concerning the use of educational television. He strongly emphasized two points: (1) that television in the classroom should be used as a teaching aid, and (2) that educational television is most effective when the controls of the TV are at the disposal of the classroom teacher.

To familiarize participants with the use of educational television, each participant served in the capacity of performer, cameraman, director, video tape operator, and technician.

## Socio-Economic Impact of Industry on Society

Dr. A. R. Jones, Assistant Professor of Sociology at Mississippi State University, presented information concerning society as it relates to industry. He indicated that industry and the community are tied together for co-existence. This tie is related to industrial demands for labor, markets, and special services.

## Summation of Classroom and Laboratory Activities

During the institute, five proposals for including mass production as an integral part of the industrial arts program were prepared by the participants. These proposals will be used by the participants to inform their administrators of the need for mass production in their industrial arts program (see Appendix K).

The practical application phase of the institute was achieved by selecting a product, setting up a company, and producing the product. The afternoon laboratory sessions were utilized for the organization of the company and the manufacturing of the product.

## The Board of Directors

The board of directors was elected by participants and charged with the following responsibilities:

1. The general organization of the company, including:
    a. The development of a company charter and bylaws (see Appendix L)
    b. The naming of the company
    c. The selection of the product to be produced
    d. The hiring of key personnel
    e. The approval of final product design and company organizational chart
    f. The development of common stock to be sold (see Appendix M).
2. The dissolving of the company, including:
    a. Declaring dividends
    b. Retriving stock
    c. Formal closing of the company.

## Company Organization

The plant manager, production manager, and personnel manager were hired by the board of directors. The personnel manager, working with the plant manager and production manager hired the other personnel either by interview or application form (see Appendix N). The organizational chart was developed by the plant manager and the personnel manager. Each participant had at least one place of responsibility in the company (see Appendix O).

### Engineering Department

The duties of the engineering department included the following:

1. The development of the design for the product including working drawings (see Appendix P)
2. The building of a prototype
3. The development of jigs and fixtures
4. The computing of a bill of materials for the product
5. The development of an operations analysis chart (see Appendix Q).

### Business Department

The business manager was responsible for the financial business of the company. His responsibilities included:

1. Purchasing of materials

2. Sale of stock
3. Supervision of sales
4. Payment of cash dividends
5. Preparation of financial statements and cost schedules (see Appendix R)

## Plant Manager

The duties and responsibilities of the plant manager were greater than that of any other person. The following is a list of the more important duties of the plant manager:

## Production Manager

The production manager was responsible for production, including the machine area, the assembly area, and the finishing area. The duties of the production manager were as follows:

1. Keeping the production charts
2. Regulating the production of parts
3. Determining the performance of production workers
4. Balancing machines and work areas
5. Developing Job Specification Forms (see Appendix S)
6. Developing work orders (see Appendix T)

## Machine Area

The foreman of the machine area had the following responsibilities:

1. Directly supervising all personnel in the machine area
2. Training of employees as to (a) machine setup, (b) safety, and (c) machine operation
3. Developing route charts for the machine area (see Appendix U)
4. Material flow in the machine area
5. Elimination of "bottlenecks"
6. Quality control in the machine area

## Assembly Department

The assembly department foreman was responsible for the following duties:

1. Setting up an assembly line
2. Making assignments to workers
3. Controlling the flow of materials
4. Quality control

## Finishing Department

The finishing department was responsible for final sanding, application of liquid finishing material, and waxing of the product.

The finishing foreman had as his responsibility the following:

1. Supervising and training of employees
2. Directing the flow of materials

3. Maintaining and requesting finishing supplies and equipment
4. Developing a flow chart for the finishing area
5. Controlling quality

## Sales Department

The duties of the sales department were:

1. Developing campaign posters
2. Securing equipment needed for sales
3. Selling the product.

# APPENDICES

# APPENDIX A

## Reference Books Purchased for the Institute

### EPDA Reference Books

Anderson, James and Tatro, Earl E. Shop Theory. New York: McGraw-Hill Book Company, Inc., 1968.

Carlsen, Darvey E. Graphic Arts. Peoria, Illinois: Charles A. Bennett Company, Inc., 1965.

Cleeton, Glen U., Pitkin, Charles W., and Cornwell, Raymond L. General Printing. 3rd ed., Bloomington, Illinois: McKnight and McKnight Publishing Company, 1963.

Dragoo, A. W. and Reed, Howard O. General Shop Metal Work. 4th ed., Bloomington, Illinois: McKnight and McKnight Publishing Company, 1964.

Feirer, John L. Drawing and Planning for Industrial Arts. Peoria, Illinois: Charles A. Bennett Company, Inc., 1963.

__________. Woodworking for Industry. Peoria, Illinois: Charles A. Bennett Company, Inc., 1963.

Frasher, Roland R. and Bedell, Earl L. General Metal Principles, Procedures, Projects. 2nd ed., Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962.

French, Thomas E. and Svenson, Carl L. Mechanical Drawing. New York: McGraw-Hill Book Company, Inc., 1966.

Groneman, Chris H. General Woodworking. New York: McGraw-Hill Book Company, Inc., 1969.

__________. and Feirer, John L. General Shop. 4th ed., New York: McGraw-Hill Book Company, Inc., 1969.

__________. and Glazener, Everett T. Technical Woodworking. New York: McGraw-Hill Book Company, Inc., 1966.

Haws, Robert W. and Schaefer, Carl J. Manufacturing in the School Shop. 4th ed., Chicago: American Technical Society, 1968.

Johnson, Harold V. General-Industrial Machine Shop. Peoria, Illinois: Charles A. Bennett Company, Inc., 1963.

Lappin, Alvin R. Plastic Projects and Techniques. Bloomington, Illinois: McKnight and McKnight Publishing Company, 1965.

Lindbeck, John R., Dueck, Lester G. and Hansen, Marc F. Basic Crafts. Peoria, Illinoic: Charles A. Bennett Company, Inc., 1969.

__________. and Lathrop, Irvin T. General Industry. Peoria: Illinois: Charles A. Bennett Company, Inc., 1969.

Marcus, Abraham. Basic Electricity. 3rd ed., Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969.

__________. Basic Electronics. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.

Money Management Institute. Money Management Library. Chicago: Household Finance Corporation, 1968.

Olson, Delmar W. Industrial Arts for the General Shop. 3rd ed., Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968.

Scobey, Mary-Margaret. Teaching Children about Technology. Bloomington, Illinois: McKnight and McKnight Publishing Company, 1968.

Swanson, Robert S. Plastics Technology Basic Materials and Processes. Bloomington, Illinois: McKnight and McKnight Publishing Company, 1965.

# APPENDIX B

## Institute Staff

### Full-Time Staff

Dr. R. J. Vasek, Director
EPDA Institute
Mississippi State University
P. O. Drawer NU
State College, Miss. 39762

Dr. Norman E. Wallace
Assistant Director
Mississippi State University
P. O. Drawer NU
State College, Miss. 39762

Mr. George Carter
Box 22
Bruce, Mississippi 38915

### Part-Time Staff

Dr. Z. William Koby
Professor of Marketing
P. O. Drawer N
State College, Miss. 39762

Dr. Frank Cotton, Jr., Head
Industrial Engineering Dept.
State College, Miss. 39762

Dr. Wayne Parker
Assistant Professor
Industrial Engineering Dept.
State College, Miss. 39762

Dr. Arthur R. Jones
Associate Professor
Sociology Department
State College, Miss. 39762

Dr. Robert Thomson, Head
Elementary and Secondary Education
State College, Miss. 39762

### Consultants and Lecturers

Dr. A. Wayne Shelton
Professor of Elementary
and Secondary Education
Mississippi State University
State College, Miss. 39762

Dr. Robert E. Magowan, Head
Manufacturing Technology
Memphis State University
Memphis, Tennessee 38111

Mr. E. F. Mitchell, Head
Industrial and Occupational
Education, Miss. State
P. O. Drawer NU
State College, Miss. 39762

Dr. E. R. Glazener, Head
Industrial Education Dept.
Texas A&M University
College Station, Texas

## Industrial Representatives

Mr. Charles H. Waldron
Division Manager
Mitchell Engineering Co.
P. O. Drawer N-911
Columbus, Miss. 39701

Mr. W. P. Nason
Accounting and Administrative Assistant
Howard Manufacturing Company
Starkville, Miss. 39762

Mr. Henry Fergus
3-M Business Products
P. O. Box 664
Jackson, Miss.

Mr. Rodney Favor
Vice President of Engineering
Garan, Inc.
Starkville, Miss. 39762

Mr. W. W. Gibson
American Can Company
P. O. Box 545
West Point, Mississippi 39773

Mr. Jim Newton
Jasper Ewing Company
123 East Pearl Street
Jackson, Mississippi

## APPENDIX C

## Institute Participants

### EPDA Institute Participants - 1969

Larry D. Aucoin
117 Hector Street
Lafayette, Louisiana 70501
Lafayette High School
Woodworking 9-12

Henry C. Bishop
515 Short Street
Jackson, Tennessee 38301
Merry Junior High School
General Shop, Basic Drawing, Woodworking, Electricity, Sheet Metal 7-9

William O. Blasingame
104 Earhart Drive
Natchez, Mississippi 39120
Natchez-Adams High School
Metalworking, Woodworking 10-12

Lawrence R. Burnette
108 Brundrette Street
Lake Charles, Louisiana 70601
Hackberry High School
Hackberry, Louisiana 70645
Woodworking, Mechanics, Electricity, Crafts 7-12

Charles Alfred Culpepper
Rt. 4, Box 50-A
Star City, Arkansas 71667
Glendale High School
Drafting, Woodworking, Power Mechanics, Metalworking 7-12

Louis W. Fisher
304 Eugene Street
New Iberia, Louisiana 70560
New Iberia Senior High School
Drafting, Woodworking 9-12

Andrew H. Gasperecz
674 Princewood Court
Baton Rouge, Louisiana 70806
State Supervisor, Industrial Arts Education
P. O. Box 44064
Baton Rouge, Louisiana 70804

Alferd Z. Hall
201 Merrill Street
Andalusia, Alabama 36420
Woodwon High School
Advanced Woodworking, Arts and Crafts, Mechanical Drawing, Exploratory Industrial Arts, General Shop and Driver Education 7-12

Willie Harris
4424 Yorkshire Drive
Montgomery, Alabama 36108
Booker T. Washington H. S.
Brewton, Alabama
General Woodworking, Carpentry, Electricity and Electronics, Leather Crafts, Welding, General Metals and Small Motors 7-12

Mearl E. Harville
4924 Green Ridge
Baton Rouge, Louisiana 70814
Glen Oaks High School
Metalworking, Woodworking, Drafting 10-12

William F. Hooper
404 Baird Street
Greenwood, Mississippi
Greenwood High School
Woodworking and Mechanical Drawing 9-12

Alton J. Johnson
210 Daniel Lake Drive
Jackson, Mississippi
Whitten Junior High School
General Arts, Woodworking, Leathercrafts 7-9

Wendell E. Jordon
811 23rd Street
Gulfport, Mississippi 39501
East Junior High School
Woodworking, Metalworking, Crafts and Electricity 8-9

Paul Landry
1065 Owl Avenue
Baton Rouge, Louisiana 70708
McKinley Junior High School
Woodworking, Drafting, Ceramics, Leathercraft, and Electricity 8

Lloyd T. Lewis
1010 Strong Avenue
Greenwood, Mississippi 38930
Greenwood Jr. High School
Electricity, Metalworking, Power Mechanics, Industrial Processes, Leathercraft, Plastics, and Woodworking 7-9

Jacob O. Miller
P. O. Box 461
New Iberia, Louisiana 70560
New Iberia Senior High School
Woodworking, Electricity and Electronics 9-12

Jack A. Morgan
Rt. 3, Box 1
West Point, Georgia 31833
Lanette High School
Lanette, Alabama
Woodworking, Metalworking, Crafts, Electricity, and Mechanical Drawing 9-12

Howard L. Newby
2217 7th Street North
Columbus, Mississippi 39701
Joe Cook Junior High School
Woodworking, Metalworking, Power Mechanics, Electricity 8-9

Leroy E. Ortego
340 McNeese Street
Opelousas, Louisiana 70570
Opelousas High School
Woodworking, Metalworking, Electricity, Mechanical Drawing 9-10

Hoyet L. Pitts
Rt. 1, Tremont, Miss. 38876
Calhoun City High School
Calhoun City, Miss. 38916
Crafts, Woodworking, Metalworking, Electricity, Mechanical Drawing 9-12

Walter F. Sawrie
4209 Cypress
N. Little Rock, Arkansas 72116
Supervisor, Industrial Education
Little Rock Public Schools
Little Rock, Arkansas 72202

Charles W. Roye
Rt. 1, Box 3
Greenwood, Miss. 38920
Director, Vocational Education and Industrial Arts
Leflore County Schools
Greenwood, Miss. 38930

Marlin Wortham
Box 36, Spiro, Oklahoma
Darby Junior High School
Fort Smith, Arkansas
Woodworking 8-9

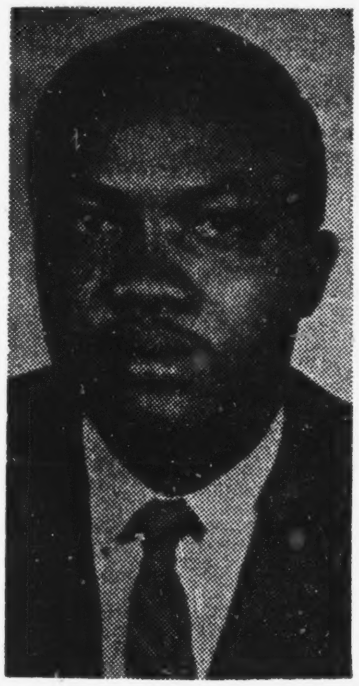
Bill D. Zimmerman
111 Shady Lane
Ferriday, Louisiana 71334
Ferriday High School
Mechanical Drawing 9 - 12
Sevier High School
Mechanical Drawing, Woodworking, Home Maintenance, Power Mechanics, and Mechanical Drawing 9 - 12

# APPENDIX D

## Publicity Brochure

APPENDIX E
NEWSPAPER CLIPPINGS

**Advertiser**



**Willie Harris**

# Educator To Attend Institute

Willie Harris, Industri
teacher at Book
Washington High S
Brewton, will attend
Institute on
Technology this s
U.S. Office of F
sponsored institu
ducted under the
Industrial an
Education D
Mississippi S

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**This Summer—**

# Bill D. Zimmerman To EPDA Institute

(Special To Democrat)

FERRIDAY, La., June 1 — Bill D. Zimmerman, Industrial Arts teacher at Ferriday High and Sevier High Schools will attend an EPDA Institute on American Technology this summer. The U. S. Office of Education sponsored institue will be conducted under the auspicies of the Industrial and Occupational Education Department at Mississippi State University.

The purpose of the institute will be to improve and strengthen the participant's knowledge concerning the ramifications of industry not included in his normal college preparation. Of equal importance will be the de-
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involved in the presentation of technical informationduring the Institute. They will discuss topics pertaining to corporate fin-

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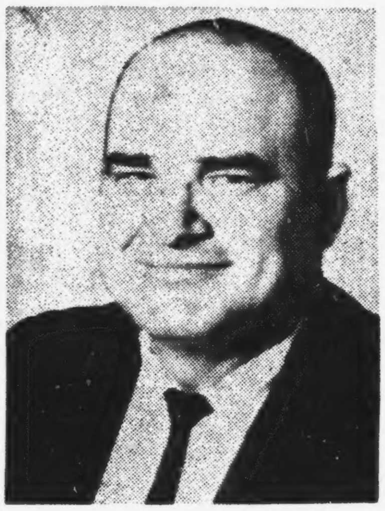

**TO EPDA INSTITUTE— Bill D. Zimmerman, Industrial Arts Teacher Ferriday High**
**tend the EPDA**
**nerican Techno-**
**coming sum-**
**is being of-**
**pi State Uni-**
**ille, Miss.**

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Andrew H. Gasperecz, State Supervisor for Industrial Arts Education, Baton Rouge, Louisiana, will attend an EPDA Institute on American Technology this summer. The U. S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State University.

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# Jackson Teacher Plans To Attend

Alton J. Johnson, Industrial Arts teacher at Whitten Junior High School, will attend an EPDA institute on American Technology this summer. The U.S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State University.

The purpose of the institute will be to improve and strengthen the participant's knowledge concerning the ramifications of industry not included in his normal college preparation. Of equal importance will be the development of methodology suitable for conveying this information to his students.

# *Woodson's Hall At Institute*

ALFRED Z. HALL
At Mississippi State

Alfred Z. Hall, Industrial Arts teacher at Woodson High School, will attend an EPDA Institute on American Technology this summer. The U. S. Office of Education sponsored institute will be onducted under the auspices of e Industrial and Occupational ıcation epartment at Missıpi State University.

purpose of the institute
to improve and streng-
participant's knowledge
mifications of industry
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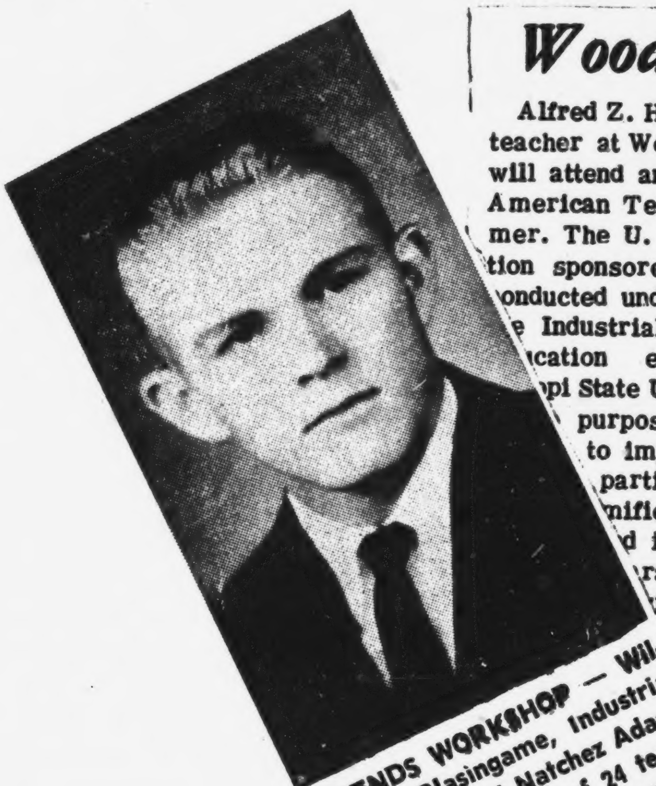
will be involved in the presentation of technical information during the Institute.

They will discuss topics pertaining to corporate finance, industrial organization, mass production, tooling, standardization aired. The participants will also take part in laboratory activities where they will actually put into practice what they learned from the presentations.

Through group interaction the participants will design, develop, and mass produce a product.

Films, field trips, and audio-visual presentations will be used



**ATTENDS WORKSHOP — William O. Blasingame, Industrial Arts Teacher at Natchez Adams High School is one of 24 teachers from the Southeastern United States to be selected to attend a special summer workshop.**

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# Industrial Arts Teachers Will Attend EDPA Institut

Loyd T. Lewis, Greenwood Junior High School industrial arts teacher; William F. Hooper, industrial arts teacher at Greenwood High School and Charles W. Roye, director of vocational education and industrial arts, Leflore County Schools will attend an EDPA Institute on American Technology this summer. The U. S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State University.

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# Wortham To Attend Institute

Marlin E. Wortham, Industrial Arts teacher at Darby Junior High School, Fort Smith, Arkansas, will attend an EPDA Institute on American Technology this summer. The U. S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State University.

## To Study Technology

Walter F. Sawrie of 4209 Cypress Street, North Little Rock, supervisor of industrial education in the Little Rock public schools, will attend an Institute on American Technology at Mississippi State University at Starkville this summer dealing with corporate finance, industrial organization, mass production, tooling, standardization and automation, and the socio-economic impact of industry on American life. He will be among 24 participants from six southeastern states.

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## Joe Cook
## Attend

Howard L. Newby, Industr Arts teacher at Joe Cook Junic High School will attend a EPDA Institute on American Technology this summer. The U.S. Office of Education sponsored institute will be conducted der the auspices of the Indust Occupational Educatic at Mississip

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*Charls A. Culpepper*

## CULPEPPER TO ATTEND INSTITUTE

Charles A. Culpepper, Industrial Arts teacher at Glendale High School, will attend an EPDA Institute on American Technology this summer. The U.S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State Univer-

---

LARRY D. AUCOIN

## Teacher To Attend Institute

Larry D. Aucoin, industrial arts teacher at Lafayette High School, will attend an EPDA institute on American technology this summer.

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2-B **THE JACKSON SUN,**
**WEDNESDAY, JUNE 11, 1969**

## Teacher Selected At Merry High For Institute

Henry C. Bishop, industrial arts teacher at Merry Junior-Senior High School in Jackson, will attend an EPDA Institute on American Technology this summer.

The U. S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State University.

## Miller To Attend Institute

JACOB MILLER

Jacob O. Miller, Industrial Arts teacher at New Iberia Senior High School, New Iberia, La., will attend an EPDA Institute on American Technology this summer. The U. S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State University.

The purpose of the institute will be to improve and strengthen the participant's knowledge concerning the ramifications of industry not included in his normal college preparation. Of equal importance will be the development of methodology suitable for conveying this information to his students.

Dr. R. J. Vasek, Director of the Institute, indicated that
Mr. Miller was among 24
ticipants selected from
southeastern states.

Instructors from the
ments of Industrial Ed
Marketing, Industrial
neering and Sociology
involved in the preser
technical informatio
the Institute. They

cuss topics pertaining to cor-
finance, industrial or-
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## Lanett Teacher To Attend EPDA Tech Institute

Jack A. Morgan, Industrial Arts teacher at Lanett High School, will attend an EPDA Institute on American Technology this summer. The U.S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State University.

The purpose of the institute will be to improve and strengthen the participant's knowledge concerning the ramifications of industry not included in his normal college preparation. Of equal importance
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## Hoyet L. Pitts Will Attend IA Institute

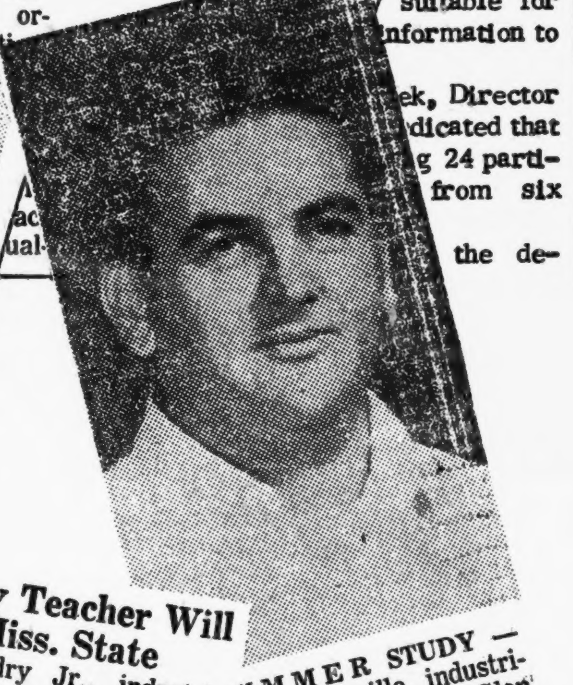
Hoyet L. Pitts, Industrial Arts teacher at Calhoun City High School, will attend an EPDA Institute on American Technology this summer. The U. S. Office of Education sponsored institute will be conducted under the auspices of the Industrial and Occupational Education Department at Mississippi State University.

## McKinley Teacher Will Attend Miss. State

Paul Landry Jr., industrial arts teacher at McKinley Junior High School, will attend an institute on American technology June 9 through July 18 at Mississippi State University at Starkville.

The study is financed under the Education Professional Development Act. The purpose to improve teachers' knowledges of industry and their methods of instruction.

Landry will be among 24 persons taking part in the institute.



UMMER STUDY — rl E. Harville, industrial arts teacher at Glen aks High School, will at- end an institute sponsored by the U.S. Office of Education at Mississippi State University this summer. He will be one of 24 Southeastern state teachers participating in a course concerning industry.

Dr. R. J. Vasek (center) Directs Mock Assembly Line
*Teachers Fred Hooper (left), Alton Johnson*

# Teachers Shoot Business Rapids

Special To The Commercial Appeal

STARKVILE, Miss., July 9. —When you try to each people to run an industry, the thing to do is set up shop right in the classroom.

That's the idea at Mississippi
State University this summer
where student teachers
turning their business blun
into learning situations in
of financial catastrophe

The 24 paricipants
filling their pocket
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The afternoons call for laboratory sessions, including field trips to industrial plants
d practical work with the
corporation.
udents divided their
long lines found in a
ompany, with a board of
tors, shop supervisors,
ineers and so forth.

Together they hammered out an idea, built a prototype and worked out the "bugs" before they began making the wooden tape cartridge racks for automobiles equiped with tape players.

They turned out 48 of the finished products on their assembly line in the woodworking shop of the department and put them on sale in the University Union, using promotional techniques they learned in class.

---

## Get-Acquainted Picnic Held for EPDA Institute

A get-acquainted picnic at City Park recently provided entertainment for the wives and children of participants in the EPDA Summer Institute in Industrial Arts at Mississippi State University. Hostesses were Mrs. Richard Vasek, Mrs. George Carter and Mrs. Norman Wallace.

Those attending with their children were Mrs. Larry Aucoin of Lafayette, La., Mrs. Jacob Miller of Baton Rouge, Mrs. Mearl Harville of New Iberia, Mrs. Alton Johnson of Jackson, Miss., Mrs. Hoyet Pitts of Calhoun City, Mrs. Wendell Jordan of Gulfport, and Mrs. Marlin Wortham of Fort Smith, Arkansas.

# APPENDIX F

## Pre-Institute Information Sent to Participants

## LABORATORY ACTIVITIES

Attached is a list of articles pertaining to group activities (mass production) for the industrial arts laboratory.

Since this type of activity is the basis for this summer's institute, would you please do the following:

1. Read as many of these articles as possible.
2. Bring these magazines with you this summer. (This will give you an opportunity to re-read the articles and provide those who do not have these issues to read the articles.)
3. Add to the list if you find additional articles or information about mass production or group industrial arts laboratory activities in general.

R. J. Vasek, Director
EPDA Institute

## ARTICLES ABOUT GROUP ACTIVITIES IN THE INDUSTRIAL ARTS LABORATORY

### IAVE

Betterly, R. E., "Industry Views Industrial Arts", IAVE, February, 1963, pp. 14-15.

Betterini, R. L., "Insulated Ice Bowl Mass Produced", IAVE, January, 1969, pp. 38-39.

Comingore, Phil, "A Marriage of Production and Instruction", IAVE, February, 1969, pp. 34-35.

Doan, Cortland C., "Industrial Arts Engineering and Manufacturing, IAVE, December, 1962, pp. 16+.

Faiks, Fred S., Fillingham, Wally F., and Homrich, Ken F., "Elements of Industry", IAVE, January, 1967, pp. 33-35.

Hacker, Michael, "The Syosset Plan Seventh Grade Manufacturing", IAVE, January, 1969, pp. 24-25.

Haunton, Gerald, "The American Industrial Arts Program", IAVE, June, 1967, pp. 28-30.

Hoots, William R., Jr., "Grade Three Studies Mass Production", IAVE, October, 1968, p. 48.

Klinginsmith, Jerry, "How to Grade in a School Production", IAVE, January, 1963, pp. 27-28.

Magowan, Robert E., "Operation Process Chart—Tool for Mass Production", IAVE, May, 1967, pp. 27-28.

Murdach, H. E., "Mass Producing a Hunting Bow Kit," IAVE, January, 1969, pp. 42-45.

Nicholich, Michel M., "Mass Producing Hurdles", IAVE, January, 1966, pp. 42-43.

Sredl, Henry J., Travis, Evan, "Mass Production", IAVE, May, 1968, pp. 43-44.

Swaringen, Charles E., "Mass Producing a Five-Foot Sled", IAVE, January, 1965, pp. 34-35.

Teel, Dean, "Unit in Manufacturing Culminates Beginning E-E Course," IAVE, February, 1967, pp. 50-51.

Tischler, Morris, "Systems Approach - Modern Technology in Skills Training", IAVE, November, 1968, pp. 31-32.

Yanabu, Jack, "Try Mass Producing Greeting Cards," *IAVE*, September, 1968, pp. 64-65.

### *Journal of Industrial Arts Education*

Carrel, Joseph J., "What is Industry", *Journal of Industrial Arts Education*, May-June, 1965, pp. 22-23.

Stadt, Ronald W., "Analyzing Industry and Organizing Content for Industrial Arts", *Journal of Industrial Arts Education*, January-February, 1966, pp. 25-27.

### *School Shop*

Allen, Dell K., "The Changing Process of Industry Demand Change in Industrial Approach", *School Shop*, January, 1966, pp. 19-21.

Dutton, Bernard, "Mass Production - Principles, Applications and Operations", *School Shop*, September, 1966, pp. 44-46.

Hoffer, Larry E., "Mass Producing an Electronics Project", *School Shop*, December, 1966, p. 31.

Kirby, Jack, "Industrology: A Bid to Teach It Like It Is", *School Shop*, December, 1968, pp. 44-45.

Lutz, Ronald J., "Functions of Industry in Action", *School Shop*, June, 1967, pp. 30-31.

Monaghan, Thomas P., "Up the Ladder to the Industrial Insight", *School Shop*, March, 1967, pp. 46-47.

Nelson, Hilding E., "The Production Project as a Unifying Experience", *School Shop*, November, 1967, pp. 50-51.

Seal, M. R., "Go Gunning for Mass Production Enrichment", *School Shop*, February, 1969, pp. 51-53.

Sterrett, Roy, Beer, Marson, and Furpur, Kenneth, "A Blue-Print for Teaching Industry", *School Shop*. October, 1967, pp. 54-55.

—Compiled by Vasek, Carter & Drown

## APPENDIX G

### Films Shown During the Institute

| Name | Source | B&W | Color | Length (min.) | Cost | Evaluation |
|---|---|---|---|---|---|---|
| The Role of the Market | Indiana University Audio-Visual Center, Bloomington, Indiana 47401 | X | | 28 | $5.40 | Good |
| Beginning and Growth of Industrial America | Indiana University | X | | 11 | 2.15 | Excellent |
| Our Productive Industry | Bailey Films, 6509 DeLongpre Avenue, Hollywood, Calif. 90028 | | X | 10 | 9.40 | Poor |
| What is a Corporation | Indiana University | | X | | 3.40 | Excellent |
| Command Performance | United States Air Force, 8900 South Broadway, St. Louis, Missouri 63125 | | X | 30 | NC | Excellent |
| Tommy Looks at Tires | Sterling Movies, 309 West Jackson, Blvd., Chicago, Illinois 60606 | | X | 28 | NC | Excellent |
| Sealed in Glass | Sterling Movies | | X | 25 | NC | Excellent |
| Profit through Industrial Design | Maynard Research Council, 7180 Wallace Ave., Pittsburgh, Penn., 15221 | | X | 20 | NC | Good |
| The Art of Making Furniture | Ideal Pictures, Inc. 1010 Church Street Evanston, Ill. 60201 | | X | 15 | NC | Excellent |

| Name | Source | B&W | Color | Length (min.) | Cost | Evaluation |
|---|---|---|---|---|---|---|
| How a Product is Made | University of Michigan, Audio-Visual Education Center, 416 4th Street, Ann Arbor, Mich. 48103 | | X | 20 | $7.08 | Good |
| How Clothing is Made | Film Associates, 11559 Santa Monica Blvd., Los Angeles, Calif. 90025 | | X | 14 | 12.46 | Excellent |
| Nature of Work - Man on Assembly Line | Indiana University | X | | 30 | 5.85 | Excellent |
| Technological Development | Indiana University | X | | 30 | 5.40 | Good |
| Production and Marketing | Indiana University | X | | 30 | 5.40 | Good |
| Production Control, I | Indiana University | X | | 15 | 2.40 | Good |
| Production Control,II | Indiana University | X | | 15 | 2.40 | Good |
| Time Study Methods | Maynard Research Council | X | | 20 | NC | Good |
| Fundamentals of Quality Control | Maynard Research Council | X | | 15 | NC | Good |
| Quality Control | Indiana University | X | | 15 | 2.40 | Good |
| Motion Study Principles | Indiana University | X | | 30 | 4.65 | Excellent |
| Steel on the Rough | Ford Film Library, The American Road, Dearborn, Michigan, 48121 | | X | 22 | NC | Excellent |
| Building a Jet Plane | Film Associates | | X | 11 | 7.46 | Good |

| Name | Source | B&W | Color | Length (min.) | Cost | Evaluation |
|---|---|---|---|---|---|---|
| Quality and Cost—Advantages through Modern Machine Tooling | Roa's Films, 1969 N. Astor Street, Milwaukee, Wisconsin 53202 |  | X | 18 | NC | Excellent |
| Styling the Experimental Car | Ford Film Library |  | X | 20 | NC | Good |
| 1999 A.D. (House of Tomorrow) | Ford Film Library |  | X | 28 | NC | Excellent |
| Sunstrand Numerically Controlled Omnimil | Sunstrand Machine Tool, Newburg Road, Belvidere, Ill. 61008 | X |  | 30 | NC | Good |
| Tracer Control in Action | Gorton Machine Corp. P.O.Box 705, Racine, Wisconsin 53401 |  | X | 36 | NC | Good |
| Strike in Town | Indiana University | X |  | 30 | 5.25 | Excellent |
| Grievance Hearing | Indiana University | X |  | 15 | 9.50 | Good |
| Listen, Listen | Ford Film Library |  | X | 18 | NC | Excellent |
| Yosemite—Valley of Light | Ford Film Library |  | X |  | NC | Excellent |

# APPENDIX H

## Report of Outside Evaluator (Glazener)

The stated objectives of the EPDA Institute at Mississippi State University have been reviewed and are considered to have been met to the fullest extent. This observation is made after a complete and thorough review of weekly unsigned evaluations by each participant, personal interviews and informal discussions with participants and observations of the participating personnel in action. It is apparent that interest in and enthusiasm for the activities of the sixth week are equal to or greater than any other week. This should be one indication of the success of this institute. The institute has increased the participants' knowledge concerning the various ramifications of industry. Of equal importance was the development of methodology suitable for conveying this information to students.

These things were accomplished through the following means:

a. Utilization of instructional personnel whose contributions were based on actual industrial experience.
b. Organization of a manufacturing company which served as a vehicle to implement the information obtained from instructional personnel, plant tours, and industrial firms.
c. Application of corporate finance, industrial organization, research and development, production

techniques, and marketing through actual laboratory activities.

d. Presentation of industrial concepts, enhanced through the study of audio-visual media—including closed-circuit TV.

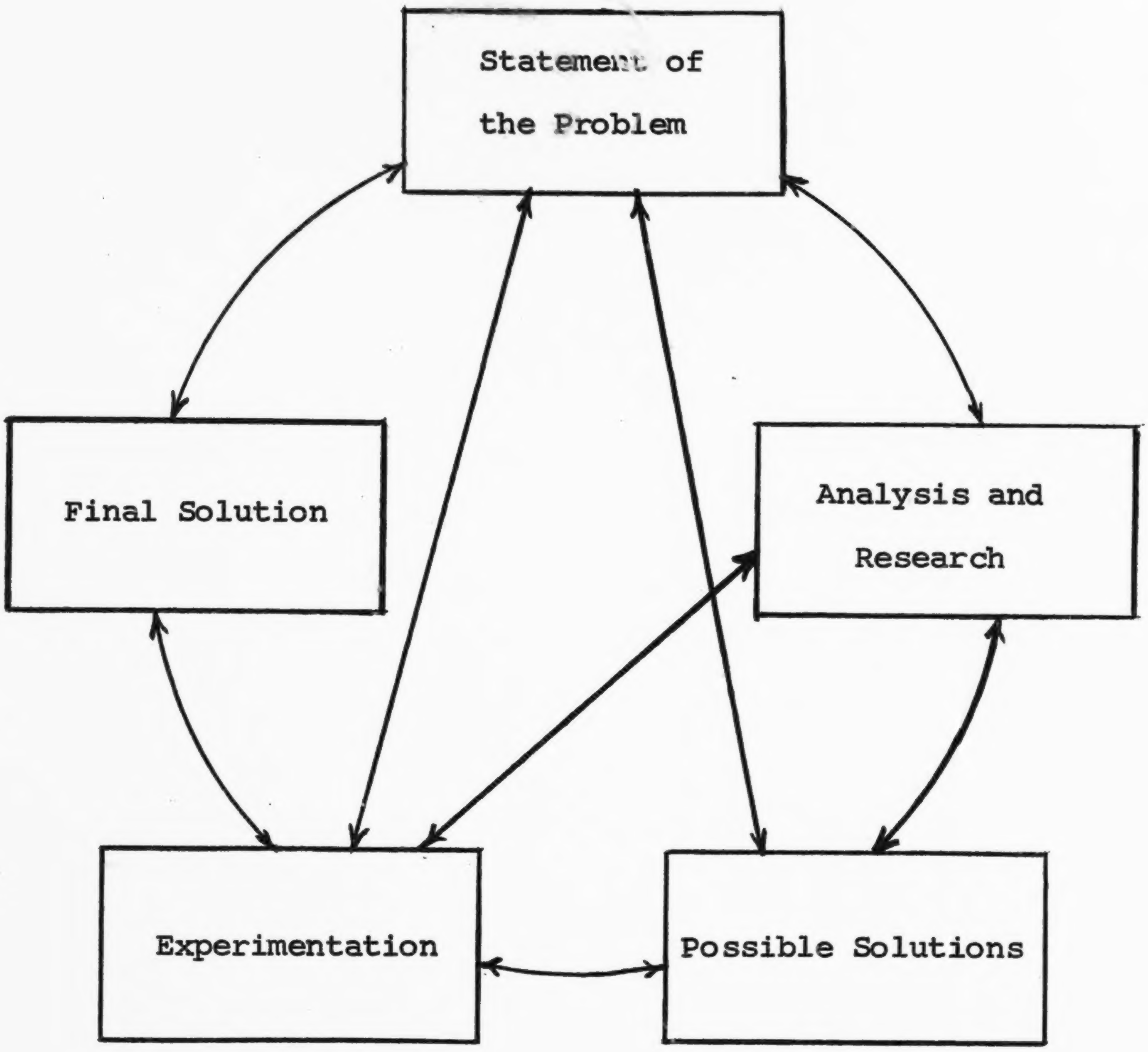
These industrial theories, activities, and instructional methods were effectively correlated by the full-time institute staff. This contributed to a totally integrated learning experience which reflected the interrelationships that exist in an actual industrial environment.

Dr. R. J. Vasek (Director), Dr. Norman Wallace (Assistant Director), and Mr. George Carter (Full-time Instructor) are especially commended for the organization and efficient operation of the institute and the rapport with the participants.

# APPENDIX I

## Design Analysis

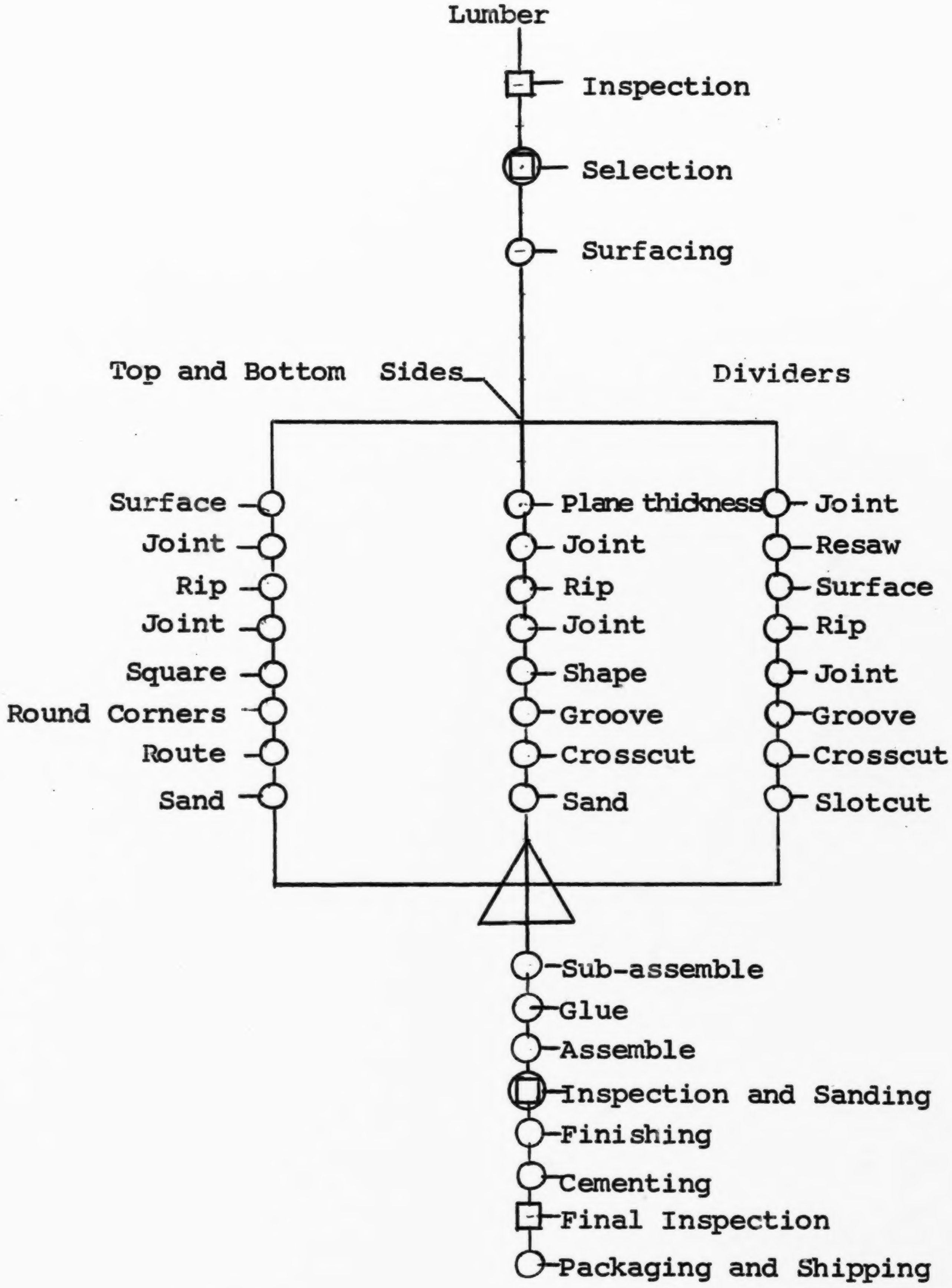
TOTE-A-TUNE, INC.



# APPENDIX J

## TOTE-A-TUNE, INC.

## PROCESS FLOW CHART



# APPENDIX K

## Proposals to School Administrators

(Title)

(Date)

(Name of the School)

(City)

Submitted by ____________________

Submission Date ____________________

Approved by ____________________
Principal

Date ____________________

____________________
Superintendent

Date ____________________

## Proposal #1

### Purpose

To bring about in the students an awareness and understanding of the importance, purpose, and operation of our industrial system.

This type of program is desirable to give the students an understanding of industrial experiences and practices. By actually forming, operating and dissolving a mock company, the students gain a wide scope of realities involved in transacting a corporation in a highly competitive society. This activity is necessary for a well rounded attitude and knowledge of industry on the part of the student.

### Objectives

To acquaint students with the role that industry plays in our modern society.

To provide the students with an understanding of the overall operation of industry.

To permit students an opportunity to explore career opportunities in all phases of industry.

### Procedure

The alloted time for this unit will be approximately nine (9) weeks. During this time the students will organize a mock corporation for the purpose of mass producing a saleable product that would be appealing to the public and return a small profit to the corporation. Shares of stock will be sold to all of the students participating and dividends will be paid when all phases of the unit have been accomplished. Key positions in the corporation will be filled by those students applying and qualifying for the positions (i.e. Plant Manager, Engineer, Business Manager, etc.). After several ideas for the product to be produced are suggested and their values weighed, one will be selected for production. Materials will then be purchased and the equipment set up for mass production.

This unit can be accomplished by using existing facilities and the cost of the program will be self-sustaining. After the various phases of the corporation have completed their functions and the unit has been completed, the corporation will be dissolved and the profit, if any, will be divided among the stockholders according to the number of shares he purchased.

* * * * * * * * *

## Proposal # 2

### Introduction

The intent of industrial arts is to give students (male and female) an insight into the operation of American industry. By simulating industry from organization to marketing of products in a classroom and laboratory situation, the students will learn about industry through involvement.

The objectives are (1) to develop the idea of the necessity for and the dignity of work, (2) to teach the relationship of capitol, labor and raw materials, (3) to illustrate the necessity of mass production and automation in our society, and the need for standardization of parts, and (4) to develop an understanding of the effect of industry on the national economy.

Procedure

After the various phases of business and industry have been presented, the classes will design a product which can be mass produced in the laboratory with the existing facilities. A corporation will be formed in each class with the election of a board of directors. A survey will be made to determine the estimated number of the product to the made and the approximate cost. Stock will be sold within the class to finance the product. Each student will be encouraged to become a shareholder.

Students will make applications for key positions within the organization. The board will select the personnel. Machine operators and labor will bid for line jobs. All students will be required to perform one or more jobs on the production line.

Materials will be purchased. Jigs and fixtures will be constructed. Assembly lines will be set up and each class will work one period a day until all items have been completed within a specified time.

The sales department will sell the product. The business manager will present a financial statement. Profits will be distributed among the stockholders and the corporation dissolved.

## Proposal # 3

### The Problem

To organize the industrial arts class into a corporation where products are produced through assembly line processes and sold to the students.

### Introductory Statement

The industrial arts programs of the past have not achieved their primary objectives, namely, that of interpreting industry to students. Therefore, the industrial arts department plans to depict industry by producing a product through an assembly line process and sell to the students within the school.

### Objectives

1. To acquaint the students with the processes, methods, materials and products of modern industry
2. To develop within the student knowledge concerning occupational information, labor unions, and management of modern industry
3. To vest within the students the understanding and appreciation of modern industry
4. To develop an understanding of a free enterprise system by means of advertising, marketing and selling procedure.

### Procedure to Follow

The product will be produced within the normal class period which will last nine weeks.

The students will be divided into an industrial organization structure. The structure will contain a line and staff organization as well as a production line.

The product will be sold after the completion of the product.

Profits will be divided among the stockholders according to the amount of stock the students have purchased.

An evaluation will be made of the entire unit and results will be forwarded to the administrators.

* * * * * * * * *

### Proposal # 4

#### Statement of Proposal

The industrial arts department in ____________________ school system, to keep abreast with modern methods of industry, proposes to establish a simulated industrial situation as an integral part of its already comprehensive program.

Through the advanced study in industrial arts, on American Technology, it has been established that industrial arts teachers should bridge the gap between what we are now teaching and industry. The industrial arts laboratory is the ideal setting for our students to gain insight into the ramifications of industry by participating in our industrial structure.

#### Objectives

1. To develop in each student a degree of knowledge

concerning the structure of modern industry

2. To develop in each student a greater cooperative attitude and a degree of work responsibility

3. To provide an opportunity for the student to develop a degree of self-discipline.

Procedures

To accomplish the objectives set forth above, the students under the supervision of the instructor will simulate an industrial situation in which they will be required to:

1. Establish a stock-selling corporation
2. Choose and design a product to be manufactured
3. Establish a production technique suitable to the product being manufactured
4. Establish a marketing process and sell the product
5. Dissolve the corporation and declare a profit or loss.

The procedure above is very general because this is to be a student developed procedure.

* * * * * * * * * *

## Proposal # 5

Proposal

We propose to introduce a unit of modern industry in addition to our present industrial arts curriculum. We will do this by organizing an industry in which a product will be designed, mass produced, and marketed by the student.

## Introduction

The students' knowledge of industry is so limited that they cannot comprehend or appreciate the technology and skills that go into the manufacture of the simplest product. Mass production of a product in an industrial situation will stimulate the student and help develop talents of leadership, creativity, organization, and cooperation necessary to meet the needs of the student.

## Objective

To vest in our young boys and girls an understanding and appreciation of modern industry, its methods, materials and processes, and its place in our culture.

## Procedure

The use of public education facilities for the purpose of making a profit may seem unethical; however, in a real industrial situation we find that the prime motive of operating a business is for the sole purpose of making a profit. Therefore, if we are to represent industry in its true form and carry out all phases of its function, we must operate with the intention of making a profit. To delete this phase would take away from the total concept intended in our objective.

The production of a product will be financed by the students. Each student will buy shares of stock in the company created and will receive a profit or loss according to the number of shares held at the time the company is dissolved. The amount of profit or loss will be limited, of course, because the company will last for only a short time. The profit or loss will occur because the student effectively applied or failed to apply the information taught about all phases of industrial operation.

The selling of the product will be conducted by the students after school. The method of selling will be determined by the sales, production, and plant managers of the company. A complete set of records will be kept by the purchasing and sales managers so that an accurate account will be available to figure the cost and profit incurred during the manufacturing period.

# APPENDIX L

## ARTICLES OF INCORPORATION

## TOTE-A-TUNE CORPORATION

In order to form a corporation that shall be organized under a charter granted by Mississippi State University through its organizational subsidiaries, namely, the EPDA Institute in American Industry operating under the auspices of the Industrial and Occupational Education Department of said university, we the undersigned, for the purposes hereinafter stated, do hereby certify as follows:

FIRST, the name of the corporation is Tote-A-Tune Corporation.

SECOND, the principal office of the corporation is to be located at Room 103, Hilbun Hall on the campus of Mississippi State University, City of Starkville, County of Oktibbeha, State of Mississippi.

THIRD, the nature of the business of the corporation and the objects and purposes proposed to be transacted, promoted, or carried on by it, are as follows, to-wit:

(a) to buy or otherwise acquire raw working materials

(b) to produce a quality product in a mass quantity

(c) to provide the consumer with a usable product

(d) to realize a reasonable return on the original investment.

FOURTH, the names and places of residence of each of the original incorporators, which severally and respectively do hereby subscribe, are as follows:

| NAME | RESIDENCE |
|---|---|
| Larry D. Aucoin | Lafayette, La. |
| Henry C. Bishop | Jackson, Tenn. |
| William O. Blasingame | Natchez, Miss. |
| Lawrence R. Burnette | Lake Charles, La. |
| Charles A. Culpepper | Star City, Ark. |
| Louis W. Fisher | New Iberia, La. |
| Andrew H. Gasperecz | Baton Rouge, La. |
| Alferd Z. Hall | Andalusia, Ala. |
| Willie Harris | Montgomery, Ala. |
| Mearl E. Harville | Baton Rouge, La. |
| William F. Hooper | Greenwood, Miss. |
| Alton J. Johnson | Jackson, Miss. |
| Wendell E. Jordan | Gulfport, Miss. |
| Paul Landry | Baton Rouge, La. |
| Lloyd T. Lewis | Greenwood, Miss. |
| Jacob O. Miller | New Iberia, La. |
| Jack A. Morgan | West Point, Ga. |
| Howard L. Newby | Columbus, Miss. |
| Leroy E. Ortego | Opelousas, La. |
| Hoyet Lee Pitts | Tremont, Miss. |
| Walter F. Sawrie | Little Rock, Ark. |
| Charles W. Roye | Greenwood, Miss. |
| Marlin E. Wortham | Spiro, Okla. |
| Bill D. Zimmerman | Ferriday, La. |
| Richard J. Vasek | Starkville, Miss. |
| Norman E. Wallace | Starkville, Miss. |
| George Carter | Bruce, Miss. |

FIFTH, the corporation is to have a functional existence of one (1) month.

SIXTH, the private property of the stockholders shall not be subject to the payment of corporate debts to any extent whatever.

SEVENTH, the number of directors of the corporation shall be fixed at a total of five (5). In case of any vacancy in the Board of Directors, the remaining directors, by affirmative vote of a majority thereof, may elect a successor to hold office for the unexpired portion of the term of the director whose place is vacant.

In furtherance, the Board of Directors are expressly authorized:

(a) to remove at any time any officer elected or appointed by the Board of Directors but only by the affirmative vote of a majority of the whole Board of Directors. Any other officer or employee of the corporation may be removed at any time by a vote of the Board of Directors, or by any committee or superior officer upon whom such power of removal may be conferred.

(b) to fix the number and cost of the corporation's common stock.

(c) from time to time to determine whether and to what extent, and at what time and places and under what conditions and regulations the accounts and books of the corporation shall be open to the inspection of the stockholders.

EIGHTH, both the stockholders and the directors of the corporation may hold meetings in such place or places outside of Room 103, Hilbun Hall, Campus of Mississippi State University, City of Starkville, County of Oktibbeha, State of Mississippi, as conditions may require.

NINTH, the corporation reserves the right to amend, alter, change or repeal any provision contained in these Articles of Incorporation, and all rights conferred on stockholders herein are granted subject to this reservation.

In compliance with the above, we have set our hands, this 20th day of June, 1969.

BOARD OF DIRECTORS

/ss/ Louis W. Fisher
Chairman of the Board

Charles A. Culpepper

Wendell E. Jordan

Charles W. Roye

W. F. Sawrie

# APPENDIX M

COMMON STOCK

Value Per Share
$________

Number of Shares
_____

TOTE - A - TUNE, INC.

Mississippi State University

Starkville, Mississippi

This certificate redeemable at value stated upon presentation at the Central Officers of the Corporation.

________________
Certificate Number

/ss/ Louis W. Fisher
Chairman, Board of Directors

6/25/69
Issue Date

## APPENDIX N

### Employee Application Form

Application for: ______________________________

Name: ________________ ________________ ________________
Last First Middle Initial

Single ( ) Married ( ) Age ( )

Address: ______________________________

Education:

| Type of School | Name | Dates Attended From | To | Degree | Major |
|---|---|---|---|---|---|
| College or University | | | | | |
| | | | | | |
| | | | | | |
| Graduate Study or Other Training | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Work Experience:

| Dates of Employment From | To | Past Employer | Duties |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

(Use Reverse if Necessary)

Military Service Record:
Branch: __________ Rank ________ Length of Service __________

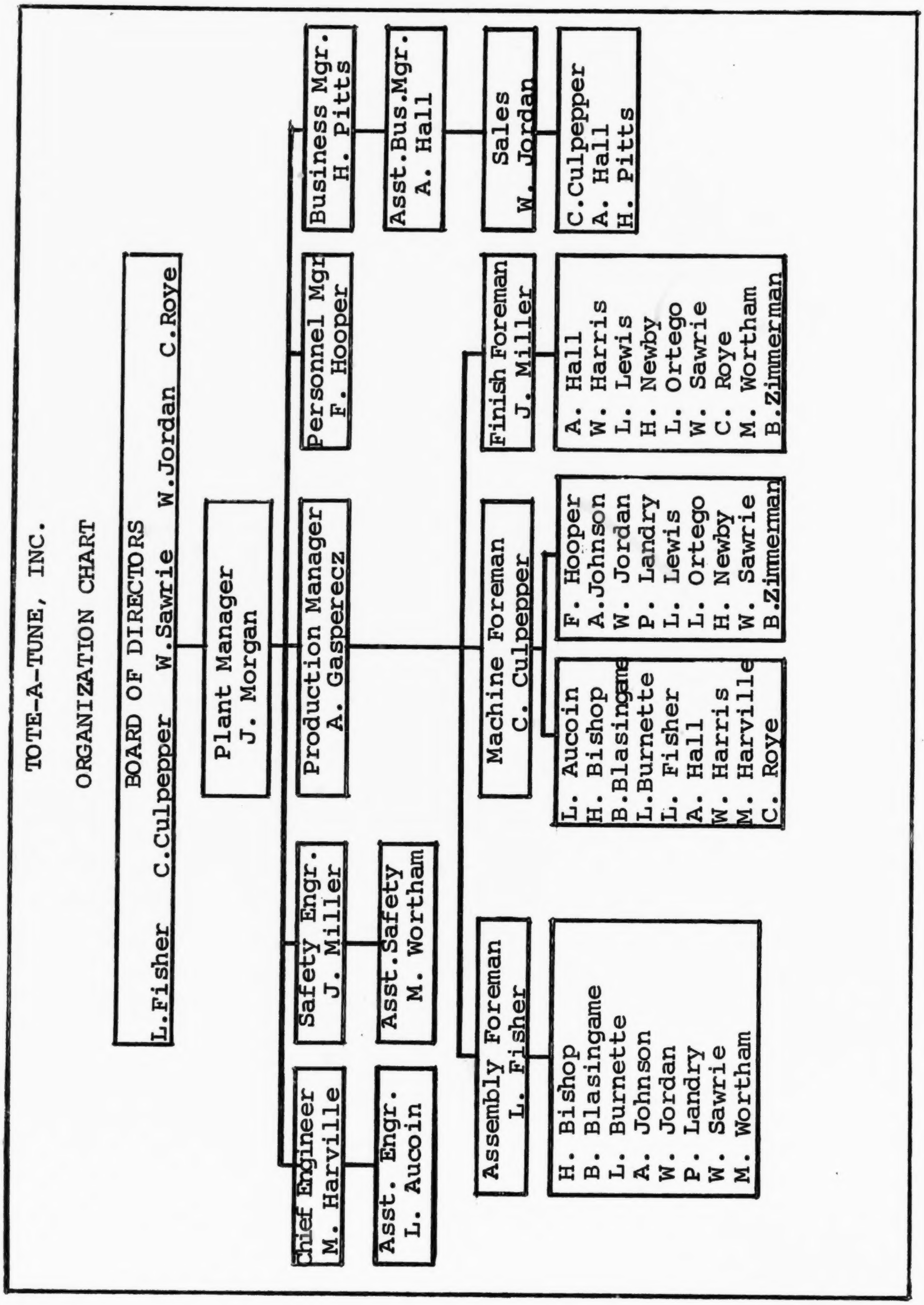
Present Class __________ Special Training Received __________

| Interviewer's Comments: | Above Avg | Avg | Below Avg |
|---|---|---|---|
| 1. Personal Character (appearance) (manner) | | | |
| 2. Technical Qualifications (scholarship, training, experience) | | | |
| 3. Interest (occupational) | | | |
| 4. General Ability (mental alertness, potential for development) | | | |
| 5. Overall Evaluation for Employment | | | |

Rejected: __________

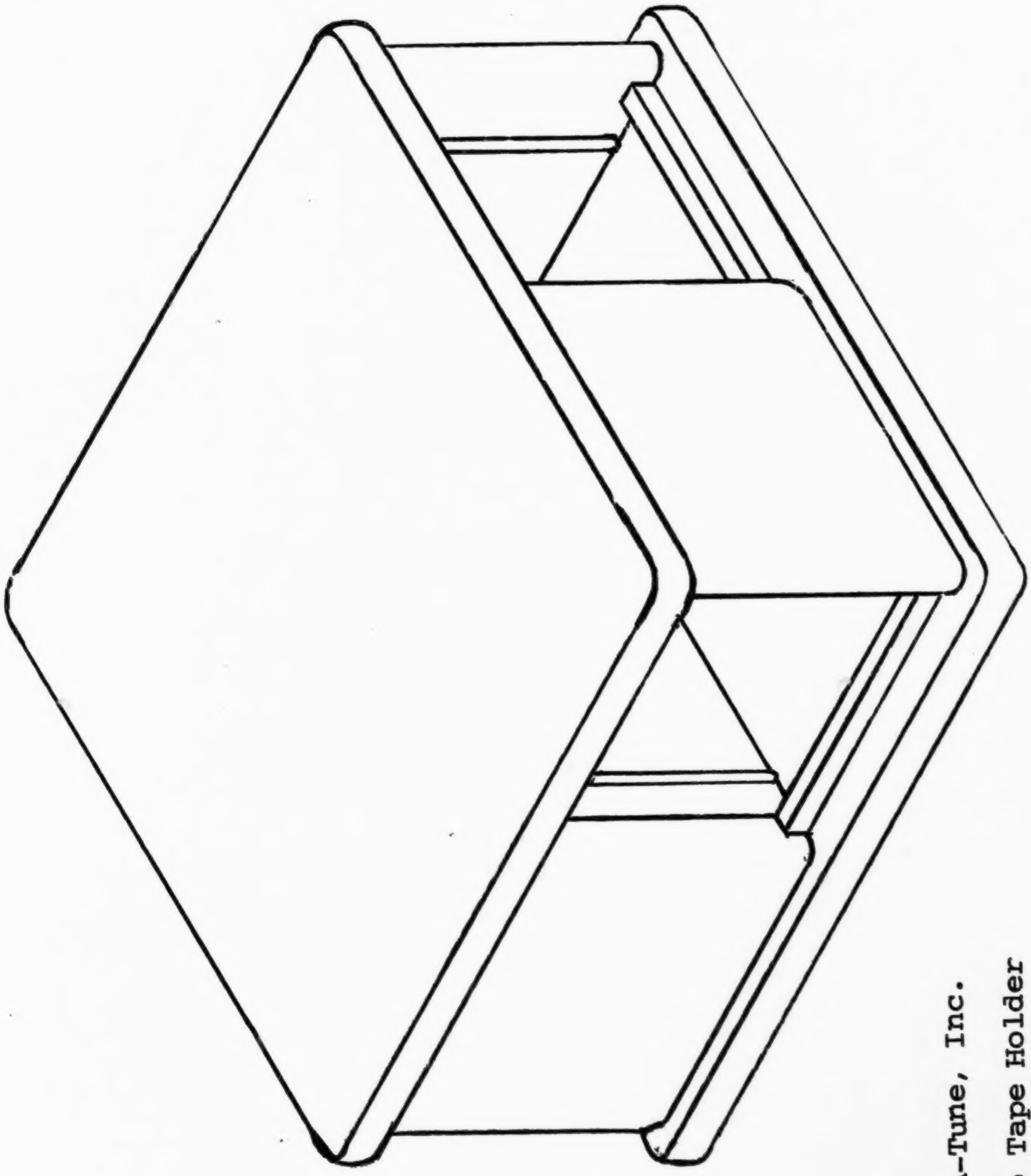
Accepted: __________

## APPENDIX O


TOTE-A-TUNE, INC.
ORGANIZATION CHART
BOARD OF DIRECTORS
L.Fisher C.Culpepper W.Sawrie W.Jordan C.Roye
Plant Manager
J. Morgan
Chief Engineer
M. Harville
Asst. Engr.
L. Aucoin
Safety Engr.
J. Miller
Asst.Safety
M. Wortham
Production Manager
A. Gasperecz
Personnel Mgr
F. Hooper
Business Mgr.
H. Pitts
Asst.Bus.Mgr.
A. Hall
Sales
W. Jordan
C.Culpepper
A. Hall
H. Pitts
Assembly Foreman
L. Fisher
H. Bishop
B. Blasingame
L. Burnette
A. Johnson
W. Jordan
P. Landry
W. Sawrie
M. Wortham
Machine Foreman
C. Culpepper
L. Aucoin
H. Bishop
B.Blasingame
L.Burnette
L. Fisher
A. Hall
W. Harris
M. Harville
C. Roye
F. Hooper
A.Johnson
W. Jordan
P. Landry
L. Lewis
L. Ortego
H. Newby
W. Sawrie
B.Zimmerman
Finish Foreman
J. Miller
A. Hall
W. Harris
L. Lewis
H. Newby
L. Ortego
W. Sawrie
C. Roye
M. Wortham
B.Zimmerman

# APPENDIX P

## Drawing of the Product



Tote-A-Tune, Inc.

Stereo Tape Holder

## APPENDIX Q

## OPERATIONS ANALYSIS CHART

| Job | | Operation | Tools | Jigs |
|---|---|---|---|---|
| 1. | Top and Bottom | Joint 1 edge | Jointer | |
| 2. | | Rip to 10-3/16" width | Circular saw 2 | Fence |
| 3. | | Joint ripped edge 1/16" | Jointer | |
| 4. | | Square one end | Circular saw 1 | Gauge |
| 5. | | Crosscut to 10-1/8" | Circular saw 1 | Gauge |
| 6. | | Route grooves on drill press | Drill Press 1,2 | Jig |
| 7. | | Shape ends and edges | Shaper | |
| 8. | | Layout corners for sanding | Template | |
| 9. | | Sand corners on disc sander | Disc Sander | |
| 10. | | Sand edges and ends with belt | Belt sander 1,2 | |
| 11. | | Sand surface with orbital sander | Orbital sander 3,4 | |
| 12. | | Temp. storage work bench #8 | | |
| 1. | Sides | Surface both sides to 1/2" | Surfacer | |
| 2. | | Joint 1 edge | Jointer #1 | |
| 3. | | Rip to width 4-15/16" | Circular saw 2 | Fence |
| 4. | | Joint ripped edge to 4-7/8" | Jointer #2 | |
| 5. | | Cut grooves 1-1/4" from edge 1/8" deep | Circular saw 2 | Fence |
| 6. | | Shape edges 1/4" radius | Shaper | |
| 7. | | Crosscut to length 4-1/2" | Circular saw 1 | Gauge |
| 8. | | Sand with orbital sander | Orbital sander | |
| 9. | | Hand sand | Table #7 | |
| 10. | | Temp. storage work bench # 8 | | |
| 1. | Dividers | Surface both faces until clear | Surfacer | |
| 2. | | Joint one edge | Jointer 2 | |
| 3. | | Resaw to approx. 3/8" thickness | Band saw | Jig |
| 4. | | Surface 1 side to 1/4" thickness | Surfacer | |
| 5. | | Rip to width 4-1/2" | Circular saw 2 | Fence |
| 6. | | Crosscut to length 8-5/8" | Circular saw 1 | Gauge |
| 7. | | Dado 1/8" | Circular saw 1 | Fence |
| 8. | | Cross lap (multiple cuts) | Circular saw 1 | Gauge |
| 9. | | Sand with orbital sander | Tables 3, 4 | |

# APPENDIX R

## COST SCHEDULES AND FINANCIAL SHEET

| Materials | Purchasing Units | Cost Per 48 Units | No. of Holders Per Purchasing Unit | Cost Per Unit |
|---|---|---|---|---|
| Walnut lumber | 185 bd. ft. | $58.50 | 48 | $1.219 |
| Revolving brackets | 48 | 32.29 | 48 | .6727 |
| Round weather stripping | 126 ft. | 7.15 | 48 | .1489 |
| Flat weather stripping | 80 ft. | 3.86 | 48 | .0804 |
| Sandpaper - Medium | 19 sheets | 2.85 | 48 | .0594 |
| Sandpaper - Fine | 19 sheets | 2.85 | 48 | .0594 |
| Sandpaper, Extra Fine | 4 sheets | .48 | 48 | .01 |
| Steel wool | 10 pads | .40 | 48 | .0083 |
| Paste wax | 1 lb. | 1.00 | 48 | .0209 |
| Glue | 1 qt. | 2.30 | 48 | .0479 |
| Lacquer | 3/4 gal. | 3.60 | 48 | .075 |
| Lacquer Thinner | 1-1/4 gal. | 2.20 | 48 | .0458 |
| Wood Putty | 12 oz. | 1.24 | 48 | .0258 |
| Respirator Mask | 6 | .90 | 48 | .0188 |
| Film for Adv. | 1 roll | 5.66 | 48 | .1179 |
| Total Cost of Materials | $125.28 | Total Cost Per Unit | | $2.61 |

## Cost Schedule per Unit

| Cost Centers | Direct Labor Per Hour | Overhead Per Hour | Total Rate Per Hour | Total Rate Per Minute | Unit Time Per Minute | Unit Cost |
|---|---|---|---|---|---|---|
| Machine | $2.00 | 100%<br>$2.00 | $4.00 | .0667 | 14.99 | $1.00 |
| Assembly | 2.00 | 50%<br>1.00 | 3.00 | .05 | 6.00 | .30 |
| Finishing | 2.00 | 50%<br>1.00 | 3.00 | .05 | 14.00 | .70 |

| | |
|---|---|
| Total Cost of Operations | $2.00 |
| Cost of Materials | 2.61 |
| Total Cost Per Unit | $4.61 |

## Financial Sheet

| | | | | |
|---|---|---|---|---|
| INCOME: | | | | |
| 54 shares - $1.25 per share | $ 67.50 | | | |
| Sales - 21 holders, $7.50 each | 157.50 | | | |
| 13 Revolving brackets $ .65 each | 8.45 | | | |
| 8 Revolving brackets $ .75 each | 6.00 | | | |
| Institute Materials | 70.47 | | | |
| Total Income | | $309.92 | | |
| EXPENDITURES: | | | | |
| Institute Materials | $ 70.47 | | | |
| Tote-A-Tune, Inc. Expenditures | 54.81 | | | |
| Total Cost of Materials | | $125.28 | | |
| Gross Income | | | $184.64 | |
| DIVIDENDS: | | | | |
| Shares sold | | | 67.50 | |
| Net Income | | | | $117.14 |

Each share increased $2.17 in value.

Each share now worth $3.42.

## APPENDIX S

## JOB-SPECIFICATION SHEET

DEPT. ____________________ JOB TITLE: ____________________

NO. STATIONS. ______________ JOB NO. ____________________

JOB IDENTIFICATION: ______________________________

______________________________________________

______________________________________________

SELECTION FACTORS:
JOB REQUIREMENTS:
Must be familiar with:

______________________________________________

______________________________________________

______________________________________________

______________________________________________

Must be able to: (or learn to)

______________________________________________

______________________________________________

______________________________________________

______________________________________________

May be required to:

______________________________________________

______________________________________________

______________________________________________

______________________________________________

## APPENDIX T

## WORK ORDER

Work Order # 1
Manufacture 48 Tote-A-Tune cartridge holders
Finish as per drawing and specifications
By order of:

Plant Manager

Supervised by:

Production Manager

| Quantity | Size: T" x W" x L" | Part Name | Material |
|---|---|---|---|
| 48 pcs. | ½" x 10-1/8" x 10-1/8" | Top | Walnut |
| 48 pcs. | ½" x 10-1/8" x 10-1/8" | Bottom | Walnut |
| 192 pcs. | ½" x 4-7/8" x 4½" | Sides | Walnut |
| 96 pcs. | ¼" x 4½" x 8-5/8" | Dividers | Walnut |

Work Order # 2

1. Assemble dividers at 90 degrees to each other by use of crosslap joint.
2. Install round rubber weather strip in the 1/16" grooves on sides.
3. Glue sides into bottom piece.
4. Place assembled dividers in cross slots.
5. Glue ¼" square rubber weather strip to the bottom of all four compartments.
6. Assemble and glue top piece to four sides and dividers.

Work Order # 3

1. Table #5 - Hand sand with grain, using #120 sandpaper and block. Finish all exposed surfaces to a condition suitable for the application of Deft.
2. Finishing Room - Thoroughly spray (spray gun) all units. Inner and outer surfaces are to be covered with Deft.
3. Store units on shelves in finishing room for drying (30 minutes minimum drying time).
4. Table # 5 - Resand all exposed surfaces with #6/0 finishing paper in preparation for second coat of Deft.
5. Finishing Room - with spray gun, coat all surfaces with Deft.
6. Store units on shelves in finishing room for drying.
7. Table #5 - Handrub with 4/0 steelwool, all exposed surfaces, wipe clean with soft cloth, apply paste wax with fingers, buff with soft cloth to furniture finish.
8. Remove finished units to supply room to await shipment.

# APPENDIX U

## ROUTE CHART